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Quick Select Guide

Application	Nominal Capacity		Valve Family	Adjustable Superheat	Internal Check	Style			Connections		Configuration		Port	
	R-22	R-410A				Hermetic	Replaceable Power Element	Field Serviceable	SAE	ODF	Angle	Straight	Conventional	Balanced
Air Conditioning and Refrigeration	1/4 to 5	1 ¼ to 5	AA	X		X				X		X	X	
	1/4 to 5	1 ¼ to 5	AN			X				X	X	X	X	
	1/4 to 5	1 ¼ to 5	AAC	X	X	X				X		X	X	
	1/4 to 5	1 ¼ to 5	ANC		X	X				X	X	X	X	
	1/4 to 5		AFA	X		X			X		X		X	
		½ to 15	NXT	X	X	X				X	X	X	X	X
	1/4 to 5 1/2		HFK	X			X	X	X	X	X	X		X
	1/4 to 5 1/2		HF	X			X			X	X	X		X
	8 to 20		HF EXT	X			X			X	X	X		X
	1/3 to 5		TI	X				X		X			X	
	8 to 20	12 to 20	TF	X			X			X		X		X
	1/2 to 12		TL					X	X	X	X	X	X	
	1/2 to 12		TCL	X				X	X	X	X	X	X	
	11 and 14		TJL	X				X		X	X	X	X	
	14 and 18		TJR	X				X		X	X	X		X
	22 to 45		TER	X				X		X	X	X		X
	55		TIR	X				X		X	X	X		X
	70 and 85		THR	X				X		X	X	X		X
100		TMR	X				X		X	X	X		X	
10 to 40		TRAE+	X				X		X		X		X	
50 to 70		TRAE	X			X			X		X		X	
Constant Pressure	1/2 to 5		ACP			X				X		X	X	
Ultra-Low Temp	3/4 to 8		ZZ	X				X	X	X	X	X	X	
De-Superheating			LA	X		X				X		X	X	
			LCL	X				X	X	X	X	X	X	

Charge Code Selector

Applications	Operating Ranges										
R-134a/R-12 Domestic Refrigerators and Freezers, Ice Makers, Dehumidifiers, Transport Refrigeration, Medium Temperature Supermarket Equipment, Medium Temperature Commercial Equipment	MC/FC										
	MZ/FZ										
	MW35/FW35 (MOP)										
	MW55										
R-22 Residential Air Conditioners & Heat Pumps, Commercial and Industrial Chillers, Medium Temperature Supermarket Equipment, Commercial Air Handlers	HCA/HAA AIR COND. & HEAT PUMP										
	HW/HW100										
	HC										
	HW65 (MOP)										
R-404A/R-507/R-502 Low Temperature Cases, Ice Makers, Commercial Air Handlers, Conditioners, Soft Ice Cream Machines, Environmental Chambers	HZ										
	SC/RC										
	SZ/RZ										
R-410A	SW45/RW45 (MOP)										
	ZW195										

-50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50

Thermal Expansion Valves
 TXV Extended Capacity Tables
 EX Valves and Controls
 EX Extended Capacity Tables
 Solenoid Valves and Coils
 Solenoid Capacity Tables
 Industrial Solenoid Valves
 Shut-Off Valves
 System Protectors
 System Protectors Capacity Tables
 Oil Controls
 Temperature Pressure Controls

A-Series

The A-series is used for heat pump, air conditioning, food services and commercial applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Hermetic, leak-free construction
- Compact size allows installation in limited spaces
- Mass spectrometer tested to ensure less than 0.10 oz/year external leakage rate

Options

- ZW195 charge available for R-410A systems
- Adjustable or non-adjustable superheat
- SAE or ODF connections standard – Chatleff or Aeroquip are available
- External or internal equalizer
- Internal check valve allows reverse flow for heat pump applications, eliminating the need for external piping and external check valve
- Bleed type pressure equalization to accommodate PSC type compressors
- Pressure limiting charges (MOP) available



Specifications

Maximum working pressure: 700 psig
UR/CUR file number: SA 5312

Nomenclature

example: AACEB 2 HC 30 IN 3/8 x 1/2 ODF ANG

A	A	C	E	B	2	H	C	30 IN	3/8 x 1/2	ODF	ANG
Valve Series Hermetic Design	Superheat Adjustment A = Adjustable N = Non-Adjustable	Internal Check Valve (optional) Reverse Flow Bypass Application	Equalizer E=External (Omit for Internal)	Bleed Hole (optional) (Omit for no bleed hole)	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R-404A Z = R-410A *B = R-448A/ R-449A +D = R-450A/ R-513A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	Capillary Tube Length 30 IN & 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2 1/2 x 5/8 5/8 x 7/8	Connection Type SAE=flare ODF = solder Chatleff (optional) Aeroquip (optional)	Configuration S/T = straight-thru ANG = 90° angle

+ = R-12, R-134a, R-450A and R-513A are interchangeable refrigerant charges
* = R-507, R-502, R-404A, R-448A and R-449A are interchangeable refrigerant charges
• = R-22 and R-407C are interchangeable refrigerant charges

AA/AN Series – Nominal* Capacity Table in Tons (kW)

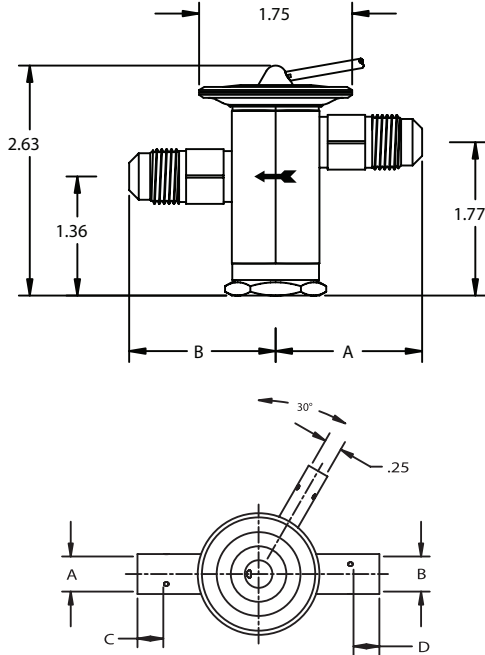
R-12	R-134a	R-450A/R-513A	R-22	R-410A	R-502	R-507/R-404A	**R-448A/R-449	R-407C
–	1/8 (0.4)	1/8 (0.4)	1/5 (0.7)	–	–	1/8 (0.4)	1/5	1/5
1/8 (0.4)	1/4 (0.9)	1/5 (0.7)	1/4 (0.9)	1/4 (0.9)	1/8 (0.4)	1/4 (0.9)	1/4 (0.9)	1/4 (0.9)
1/4 (0.9)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/2 (1.8)
1/2 (1.8)	3/4 (2.7)	1/2 (1.8)	1 (3.5)	1 (3.5)	1/2 (1.8)	3/4	1 (3.5)	1 (3.5)
1 (3.5)	1 (3.5)	3/4 (2.7)	1½ (5.3)	1½ (5.3)	1 (3.5)	1 (3.5)	1¼ (4.4)	1¼ (4.4)
–	1½ (5.3)	1 (3.5)	2 (7.0)	2 (7.0)	–	1¼ (4.4)	2 (7.0)	2 (7.0)
1½ (5.3)	2 (7.0)	1½ (5.3)	2½ (8.8)	3 (11.0)	1½ (5.3)	2 (7.0)	2½ (8.8)	2½ (8.8)
2 (7.0)	2½ (9.0)	2 (7.0)	3 (11.0)	4 (14.0)	2 (7.0)	2¼ (8.0)	3¼ (11.5)	3¼ (11.5)
2½ (9.0)	3 (11.0)	2½ (9.0)	4 (14.0)	5 (17.0)	2½ (8.8)	2½ (8.8)	4 (14.0)	4 (14.0)
3 (11.0)	4 (14.0)	3 (11.0)	5 (17.0)	–	3 (11.0)	3½ (12.0)	5¼ (19.0)	5¼ (19.0)

All capacities shown are at 100°F condensing, 40°F evaporator temperature.
*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.
**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

A-Series

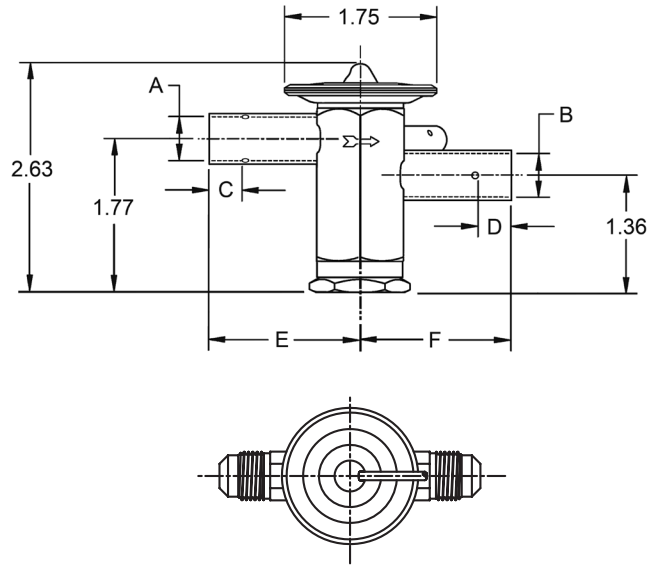
ANCE SAE Dimensional Data

Connection Size		A	B
Inlet	Outlet		
3/8 SAE	3/8 SAE	1.67	1.67
1/2 SAE	1/2 SAE	1.75	1.75



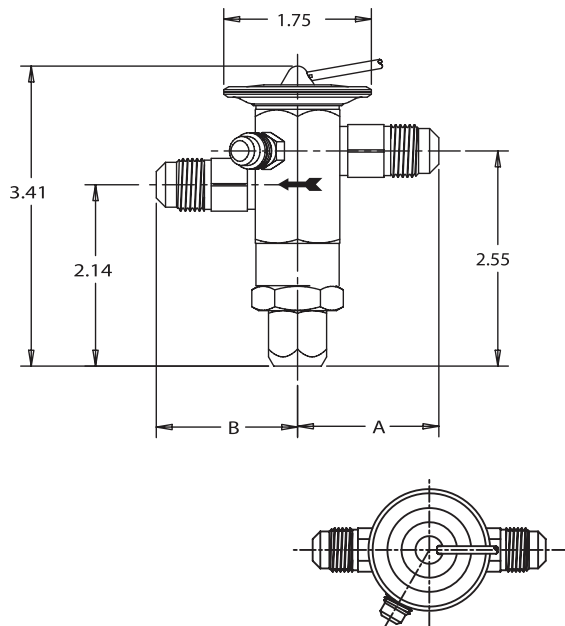
ANCE ODF Dimensional Data

Connection Size		A± .002	B± .002	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.32	0.32	1.70	1.73
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.70	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.38	1.73	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.38	0.38	1.73	1.73
1/2 ODF	5/8 ODF	0.63	0.61	0.38	0.50	1.75	1.75



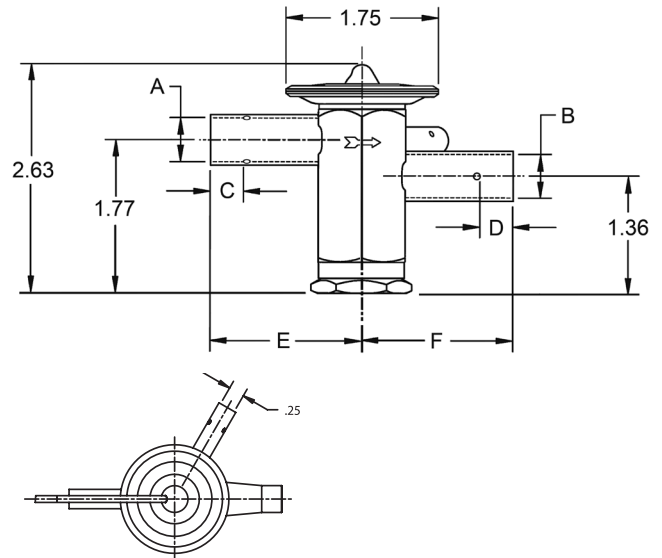
AACE SAE Dimensional Data

Connection Size		A	B
Inlet	Outlet		
3/8 SAE	3/8 SAE	1.67	1.67
1/2 SAE	1/2 SAE	1.75	1.75



AACE ODF Dimensional Data

Connection Size		A± .002	B± .002	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.32	0.32	1.70	1.73
3/8 ODF	3/8 ODF	0.38	0.38	0.32	0.32	1.70	1.73
3/8 ODF	1/2 ODF	0.38	0.50	0.32	0.38	1.73	1.73
1/2 ODF	1/2 ODF	0.50	0.50	0.38	0.38	1.73	1.73
1/2 ODF	5/8 ODF	0.63	0.61	0.38	0.50	1.75	1.75



A-Series

Ordering Information

Without Internal Check Valve

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN		
R-410A	AAE	1-1/2	ZW195	3/8 X 1/2 ODF S/T	30 IN	066515		
			ZW195	3/8 X 3/8 ODF S/T	30 IN	064595		
		3	ZW195	3/8 X 1/2 ODF S/T	30 IN	065579		
			ZW195	CHATLEFF	30 IN	015776		
		5	ZW195	1/2 X 5/8 ODF S/T	30 IN	065580		
			ZW195	CHATLEFF	30 IN	015794		
R-134a R-12 R-450A R-513A	AA	1/8	MC	1/4 X 3/8 ODF S/T	30 IN	066030		
			MC	1/4 X 1/2 ODF S/T	30 IN	065821		
		1/4	MC	1/4 X 3/8 ODF S/T	30 IN	062051		
			MC	1/4 X 1/2 ODF S/T	5 FT	065623		
		1	MC	3/8 X 1/2 ODF S/T	30 IN	065776		
			MC	1/4 X 3/8 SAE S/T	30 IN	058985		
	AAE	1/2	MC	1/4 X 1/2 ODF S/T	5 FT	065624		
			MZ	1/4 X 3/8 SAE S/T	30 IN	058986		
		1/2	MC	1/4 X 1/2 ODF S/T	5 FT	065630		
			MC	3/8 X 1/2 ODF S/T	5 FT	065631		
		R-22 R-407C	AA	1/4	HC	1/4 X 3/8 ODF S/T	5 FT	056315
					HC	1/4 X 1/2 ODF S/T	5 FT	055932
1/2	HC			1/4 X 1/2 ODF S/T	5 FT	065626		
	HC			3/8 X 3/8 ODF S/T	30 IN	056547		
1/2	HC			3/8 X 1/2 SAE S/T	5 FT	057828		
	HC			1/4 X 1/2 ODF S/T	5 FT	065632		
AAE	1/2		HC	3/8 X 1/2 ODF S/T	5 FT	065633		
			HC	3/8 X 1/2 SAE ST	5 FT	057987		
	1		HC	1/4 X 3/8 ODF ST	30 IN	059582		
			HC	1/4 X 1/2 ODF S/T	5 FT	065634		
	1-1/2		HC	3/8 X 1/2 ODF S/T	5 FT	065635		
			HC	3/8 X 1/2 ODF S/T	5 FT	064424		
AAE	2	HC	3/8 X 1/2 ODF S/T	5 FT	064425			
		HCA	3/8 X 1/2 ODF S/T	30 IN	049632			
	2-1/2	HAA	3/8 X 1/2 ODF S/T	30 IN	063648			
		HAA	CHATLEFF	30 IN	013938			
	3	HCA	3/8 X 1/2 ODF S/T	30 IN	049633			
		HC	3/8 X 1/2 ODF S/T	5 FT	062376			
	4	HCA	3/8 X 1/2 ODF S/T	30 IN	049634			
		HCA	1/2 X 5/8 ODF S/T	30 IN	060643			
		HC	1/2 X 5/8 ODF S/T	5 FT	061960			
		HCA	3/8 X 1/2 ODF S/T	30 IN	049638			
		HCA	1/2 X 1/2 ODF S/T	30 IN	061247			
		HAA	3/8 X 1/2 ODF S/T	30 IN	063649			
5	HAA	CHATLEFF	30 IN	013939				
	HC	1/2 X 5/8 ODF S/T	5 FT	059565				
	HC	5/8 X 7/8 ODF S/T	30 IN	061805				
	HCA	3/8 X 1/2 ODF S/T	30 IN	054024				
	HCA	1/2 X 5/8 ODF S/T	30 IN	059683				
	HW100	3/8 X 5/8 ODF S/T	5 FT	062088				
AAEB	2	HCA	3/8 X 1/2 ODF S/T	30 IN	059616			
		HCA	3/8 X 1/2 ODF S/T	30 IN	059603			
	4	HCA	1/2 X 1/2 ODF S/T	30 IN	059605			
		HCA	1/2 X 1/2 ODF S/T	30 IN	059607			

Chatleff Gasket Kit – KG 10045 (PCN: 066031)

* For interchangeable refrigerant charges R-134a/R-12, R-450A/R-513A R-404A/R-507/R-502, R-448A/R-449A and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

Standard Product Offering

Without Internal Check Valve (cont.)

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-404A R-507 R-502 **R-448A **R-449A	AA	1/8	SC	1/4 X 3/8 ODF S/T 6A	30 IN	065921
			SC	1/4 X 1/2 ODF S/T	30 IN	063503
		1/4	SW45	1/4 X 3/8 ODF S/T	5 FT	065676
			SZ	1/4 X 3/8 ODF S/T	5 FT	065675
		1/2	SC	1/4 X 1/2 ODF S/T	30 IN	063504
			SW45	1/4 X 1/2 ODF S/T	5 FT	065685
		1/2	SZ	1/4 X 1/2 ODF S/T	5 FT	065682
			SZ	3/8 X 1/2 ODF S/T	30 IN	063925
		3/4	SC	3/8 X 1/2 ODF S/T	30 IN	066200
			SW45	3/8 X 1/2 ODF S/T	30 IN	065686
		3/4	SZ	3/8 X 1/2 ODF S/T	30 IN	065149
			SC	3/8 X 1/2 ODF S/T	30 IN	066201
	1	SW45	3/8 X 1/2 ODF S/T	30 IN	065606	
		SZ	3/8 X 1/2 ODF S/T	30 IN	063926	
	AAE	1/4	SC	1/4 X 1/2 ODF S/T	30 IN	066422
			SW45	1/4 X 1/2 ODF S/T	30 IN	066508
			SZ	1/4 X 1/2 ODF S/T	30 IN	066435
			SC	1/4 X 1/2 ODF S/T	30 IN	066423
			SC	3/8 X 1/2 ODF S/T	5 FT	066085
			SW45	1/4 X 1/2 ODF S/T	5 FT	065636
		1/2	SW45	3/8 X 1/2 ODF S/T	5 FT	065688
			SZ	1/4 X 1/2 ODF S/T	30 IN	066436
			SZ	3/8 X 1/2 ODF S/T	5 FT	065687
			SC	3/8 X 1/2 ODF S/T	5 FT	066086
			SW45	3/8 X 1/2 ODF S/T	30 IN	066509
			SZ	1/4 X 1/2 ODF S/T	30 IN	066437
	3/4	SC	3/8 X 1/2 ODF S/T	5 FT	066087	
		SW45	3/8 X 1/2 ODF S/T	5 FT	065637	
	1	SZ	3/8 X 1/2 ODF S/T	5 FT	065183	
		SC	3/8 X 1/2 ODF S/T	5 FT	066081	
	1-1/4	SW45	3/8 X 1/2 ODF S/T	5 FT	066079	
		SZ	3/8 X 1/2 ODF S/T	5 FT	066080	
	1-1/2	SC	3/8 X 1/2 ODF S/T	5 FT	066448	
		SC	3/8 X 1/2 SAE S/T	30 IN	061882	
	1-1/2	SW45	3/8 X 1/2 ODF S/T	5 FT	065698	
		SZ	3/8 X 1/2 ODF S/T	5 FT	065697	
	2	SC	3/8 X 1/2 ODF S/T	30 IN	065330	
		SW45	3/8 X 1/2 ODF S/T	5 FT	065690	
	2	SZ	3/8 X 1/2 ODF S/T	5 FT	065689	
		SW45	3/8 X 1/2 ODF S/T	5 FT	066082	
	2-1/4	SZ	3/8 X 1/2 ODF S/T	5 FT	066083	
		SC	3/8 X 1/2 ODF S/T	5 FT	066084	
	2-1/4	SC	3/8 X 1/2 SAE S/T	30 IN	061885	
		SW45	1/2 X 5/8 ODF S/T	5 FT	065148	
	2-1/2	SZ	1/2 X 5/8 ODF S/T	5 FT	065691	
		SC	3/8 X 1/2 ODF S/T	30 IN	066510	
	3	SW45	3/8 X 1/2 ODF S/T	5 FT	065693	
		SZ	3/8 X 1/2 ODF S/T	5 FT	065692	

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

With Internal Check Valve

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN	
R-410A	AAE	1-1/2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065871	
			ZW195	CHATLEFF	30 IN	016432	
		2	ZW195	3/8 X 1/2 ODF S/T	5 FT	065872	
			ZW195	CHATLEFF	30 IN	016615	
		3	ZW195	3/8 X 1/2 ODF S/T	5 FT	065873	
			ZW195	CHATLEFF	30 IN	015795	
		4	ZW195	3/8 X 1/2 ODF S/T	5 FT	065874	
			ZW195	CHATLEFF	30 IN	016433	
		5	ZW195	1/2 X 5/8 ODF S/T	5 FT	065875	
			ZW195	CHATLEFF	30 IN	015796	
		AAECB	1-1/2	ZW195	3/8 X 1/2 ODF S/T	30 IN	065946
				ZW195	3/8 X 1/2 ODF S/T	30 IN	065942
	2		ZW195	3/8 X 1/2 ODF S/T	30 IN	065943	
			ZW195	3/8 X 1/2 ODF S/T	30 IN	065944	
	3		ZW195	3/8 X 1/2 ODF S/T	30 IN	065945	
			ZW195	3/8 X 1/2 ODF S/T	30 IN	065946	
	AAE		1	HCA	3/8 X 1/2 ODF S/T	30 IN	063795
				HCA	3/8 X 1/2 ODF S/T	5 FT	058923
			1-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	063676
				HAA	3/8 X 1/2 ODF S/T	30 IN	064102
			2-1/2	HAA	CHATLEFF	30 IN	014091
				HCA	3/8 X 1/2 ODF S/T	5 FT	065868
		3	HCA	1/2 X 5/8 ODF S/T	5 FT	065797	
			HCA	3/8 X 1/2 ODF S/T	5 FT	065869	
4		HAA	3/8 X 1/2 ODF S/T	30 IN	064103		
		HAA	1/2 X 5/8 ODF S/T	5 FT	065863		
5		HAA	3/8 X 1/2 ODF S/T	30 IN	014092		
		HAA	CHATLEFF	30 IN	014093		
AAECB	1-1/2	HCA	3/8 X 1/2 ODF S/T	30 IN	065842		
		HCA	3/8 X 1/2 ODF S/T	30 IN	065959		
	3	HCA	3/8 X 1/2 ODF S/T	30 IN	065941		
		HCA	3/8 X 5/8 ODF S/T	30 IN	065844		

AFA(E) Series

The AFA series is designed for air conditioning and commercial refrigeration applications requiring angle configuration SAE connections. The AFA is ideal for those applications requiring compact size combined with stable and accurate control over wide load and evaporator temperature ranges.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- External superheat adjustment
- Replaceable inlet strainer
- SAE connections only
- Wrench flats on inlet and outlet



Options

- External or internal equalizer

Specifications

- Maximum working pressure: 700 psig
- UR/CUR file number: SA 5312

Nomenclature example: AFAE 1/2 HC 5 FT 3/8 x 1/2 SAE ANG

AF	A	E	1/2	H	C	5 FT	3/8 x 1/2	SAE	ANG
Valve Series Hermetic Design, Flare Connections	Superheat Adjustment A = Adjustable	Equalizer E=External (Omit for Internal)	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code +F = R-12 • H = R-22 • M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R-404A Z = R-410A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	Capillary Tube Length 30 IN & 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2	Connection Type SAE=flare	Configuration ANG = 90° angle

+ = R-12 and R-134a are interchangeable refrigerant charges, * = R-507, R-502 and R-404A are interchangeable refrigerant charges, • = R-22 and R-407C are interchangeable refrigerant charges

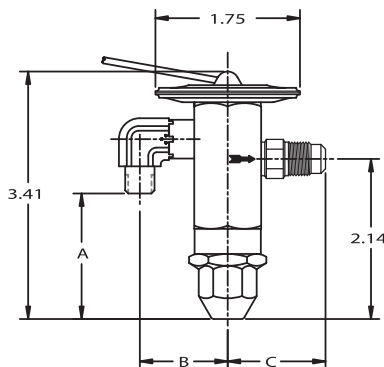
AFA Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22	R-502	R-507/R-404A	R-407C
-	1/8 (0.4)	1/5 (0.7)	-	1/8 (0.4)	1/5 (0.7)
1/8 (0.4)	1/4 (0.9)	1/4 (0.9)	1/8 (0.4)	1/4 (0.9)	1/4 (0.9)
1/4 (0.9)	1/2 (1.8)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/2 (1.8)
1/2 (1.8)	3/4 (2.7)	1 (3.5)	1/2 (1.8)	3/4 (2.7)	1 (3.5)
1 (3.5)	1 (3.5)	1½ (5.3)	1 (3.5)	1 (3.5)	1¼ (4.4)
-	1½ (5.3)	2 (7.0)	-	1¼ (4.4)	2 (7.0)
1½ (5.3)	2 (7.0)	2½ (9.0)	1½ (5.3)	2 (7.0)	2½ (9.0)
2 (7.0)	2½ (9.0)	3 (11.0)	2 (7.0)	2½ (8.0)	3¼ (11.5)
-	3 (11.0)	-	-	2½ (9.0)	4 (14.0)
3 (11.0)	4 (14.0)	5 (17.0)	3 (11.0)	3½ (12.0)	5¼ (19.0)

All capacities shown are at 100°F condensing, 40°F evaporator temperature.

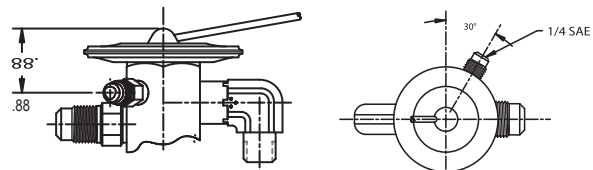
*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

Dimensional Data



Remote Bulb Tubing Length 30" or 5' Standard

AFA(E) Connections (in)				
Inlet	Outlet	A	B	C
1/4 SAE elbow	3/8 SAE	1.56	1.31	1.64
	1/2 SAE			1.35
	5/8 SAE			1.98
3/8 SAE elbow	3/8 - 1/2 SAE	1.47	1.31	1.73
	3/8 SAE			1.34
	1/2 SAE			1.36
	5/8 SAE			1.98
	3/8 - 1/2 SAE			1.73



Ordering Information

Internally Equalized								
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN		
R-12	AFA	1/4	FC	1/4 X 3/8-1/2 SAE	5 FT	047753		
			FC	1/4 X 3/8-1/2 SAE	30 IN	057047		
			FC	3/8 X 3/8-1/2 SAE	5 FT	054258		
		1/2	FC	1/4 X 3/8-1/2 SAE	5 FT	047752		
			FC	1/4 X 3/8-1/2 SAE	30 IN	057028		
			FC	3/8 X 3/8-1/2 SAE	5 FT	054226		
			FC	3/8 X 3/8-1/2 SAE	30 IN	057027		
			1	FC	3/8 X 3/8-1/2 SAE	5 FT	047758	
				FC	3/8 X 3/8-1/2 SAE	30 IN	057029	
R-134a R-12	AFA	1/4	MC	1/4 X 3/8-1/2 SAE	5 FT	058536		
			MC	1/4 X 3/8-1/2 SAE	30 IN	057607		
		1/2	MC	1/4 X 3/8-1/2 SAE	30 IN	057606		
			MC	3/8 X 3/8-1/2 SAE	30 IN	059625		
		1	MC	1/4 X 3/8-1/2 SAE	30 IN	057605		
		R-22 R-407C	AFA	1/4	HC	1/4 X 3/8-1/2 SAE	30 IN	057261
HZ	1/4 X 3/8-1/2 SAE				30 IN	059575		
1/2	HC			1/4 X 3/8-1/2 SAE	30 IN	057260		
	HC			3/8 X 3/8-1/2 SAE	5 FT	054229		
1	HC			3/8 X 3/8-1/2 SAE	5 FT	054231		
	HZ			3/8 X 3/8-1/2 SAE	5 FT	057555		
1-1/2	HC			3/8 X 3/8-1/2 SAE	5 FT	054232		
2	HC			3/8 X 3/8-1/2 SAE	5 FT	054233		
3	HC			3/8 X 3/8-1/2 SAE	5 FT	054234		
R-404A R-507 R-502	AFA			1/4	SC	1/4 X 3/8-1/2 SAE	5 FT	064072
					SW45	1/4 X 3/8-1/2 SAE	30 IN	066498
					SZ	1/4 X 3/8-1/2 SAE	30 IN	066438
		1/2	SC	1/4 X 3/8-1/2 SAE	30 IN	066424		
			SW45	1/4 X 3/8-1/2 SAE	30 IN	066499		
			SZ	1/4 X 3/8-1/2 SAE	30 IN	066439		
		3/4	SC	3/8 X 3/8-1/2 SAE	30 IN	066425		
			SW45	3/8 X 3/8-1/2 SAE	30 IN	066500		
			SZ	3/8 X 3/8-1/2 SAE	30 IN	066440		
		1	SC	3/8 X 3/8-1/2 SAE	30 IN	066426		
			SW45	3/8 X 3/8-1/2 SAE	30 IN	066501		
			SZ	3/8 X 3/8-1/2 SAE	30 IN	066441		

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected? **Solution:** From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

Standard Product Offering

Ordering Information (cont.)

Externally Equalized						
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-134a R-12	AFAE	1/4	MC	3/8 X 3/8-1/2 SAE	30 IN	063898
		1/2	MC	1/4 X 3/8-1/2 SAE	30 IN	057853
			MC	3/8 X 3/8-1/2 SAE	30 IN	061904
		1	MC	3/8 X 3/8-1/2 SAE	30 IN	057613
		1-1/2	MC	3/8 X 3/8-1/2 SAE	30 IN	060865
		2	MC	3/8 X 3/8-1/2 SAE	30 IN	061906
R-22 R-407C	AFAE	1/2	HC	1/4 X 3/8-1/2 SAE	5 FT	054243
		1	HC	3/8 X 3/8-1/2 SAE	5 FT	054246
			HC	1/4 X 3/8-1/2 SAE	5 FT	054245
			HZ	3/8 X 3/8-1/2 SAE	5 FT	057163
		1-1/2	HC	3/8 X 3/8-1/2 SAE	5 FT	054247
			HZ	3/8 X 3/8-1/2 SAE	5 FT	057950
		2	HZ	3/8 X 3/8-1/2 SAE	5 FT	057951
			HC	3/8 X 3/8-1/2 SAE	5 FT	054248
		3	HC	3/8 X 3/8-1/2 SAE	5 FT	054249
			HZ	3/8 X 3/8-1/2 SAE	5 FT	057556
		5	HC	3/8 X 3/8-1/2 SAE	5 FT	054250
			HZ	3/8 X 3/8-1/2 SAE	5 FT	058484
R-404A R-507 R-502	AFAE	1/4	SC	1/4 X 3/8-1/2 SAE	30 IN	066427
			SW45	1/4 X 3/8-1/2 SAE	30 IN	066502
			SZ	1/4 X 3/8-1/2 SAE	30 IN	066442
		1/2	SC	1/4 X 3/8-1/2 SAE	30 IN	066428
			SW45	3/8 X 3/8-1/2 SAE	30 IN	066453
			SW45	1/4 X 3/8-1/2 SAE	30 IN	066503
			SZ	1/4 X 3/8-1/2 SAE	30 IN	066443
		3/4	SC	3/8 X 3/8-1/2 SAE	30 IN	061911
			SW45	3/8 X 3/8-1/2 SAE	30 IN	066504
			SZ	1/4 X 3/8-1/2 SAE	30 IN	066444
		1	SC	3/8 X 3/8-1/2 SAE	30 IN	061912
			SW45	3/8 X 3/8-1/2 SAE	30 IN	066452
			SZ	1/4 X 3/8-1/2 SAE	30 IN	066445
		1-1/2	SZ	3/8 X 3/8-1/2 SAE	5 FT	063464
			SC	3/8 X 3/8-1/2 SAE	5 FT	066454
			SZ	3/8 X 3/8-1/2 SAE	5 FT	063465
		2	SC	3/8 X 3/8-1/2 SAE	30 IN	061914
			SW45	3/8 X 3/8-1/2 SAE	5 FT	066505
SZ	3/8 X 3/8-1/2 SAE		5 FT	061646		

* For interchangeable refrigerant charges R-134a/R-12, R-404A/R-507/R-502, and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected? **Solution:** From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

Standard Product Offering

NXT Series R-410A

The Emerson NXT Series is a balanced ported valve designed for high efficiency R-410A air conditioning and heat pump applications. NXT Series valves operate over a wide range of conditions and applications, while offering excellent performance, superior reliability, and unparalleled valve life.

Features

- Precision superheat control optimized for R-410 A systems
- Enhanced power element design offers extended valve life
- Stainless steel power element eliminates corrosion and prevents valve failure
- Laser etched identification markings for permanent legibility
- Hermetic, leak-free construction of all joints
- Compact size allows installation in limited spaces
- Bi-Flow capability allows one valve to control the superheat in both cooling and heating modes for close-coupled or packaged heat pump applications
- Balanced port construction compensates for changes in operating pressures due to varying ambients, gas defrost, heat reclaim, or widely varying evaporator loads
- External equalizer is standard
- Screens on ODF inlet connections

Specifications

- Maximum working pressure (MWP): 700 psig
- R-410A operating range: -20°F to +50°F
- UR/CUR file number: SA 5312

Nomenclature example: NAE 3 ZAA ODF B15%

N	A	E	3	ZAA	ODF	B15%
NXT Series	Body Type A = Adjustable, With Check, Straight-Through B = Adjustable, No Check, Straight-Through C = Non-Adjustable, With Check, Straight-Through D = Non-Adjustable, No Check, Straight-Through	Equalizer E = External Equalizer	Capacity (In Tons)	Refrigerant Code ZAA = R-410A	Connection Type ODF = Solder CHA = Chatteff	Bleed % (Omit for None)



Non-Adjustable

Adjustable

Options

- High flow internal check valve allows reverse flow for heat pump applications, eliminating the need for external check valve and improving overall system efficiency
- Adjustable or non-adjustable superheat
- Bleed type pressure equalization available to accommodate PSC type compressors
- ODF connections are standard - Chatteff connections are available
- External equalizer (1/4" ODF) is a standard offering. Other configurations are available
- External equalizer 1/8" tube with 45° end cut is a standard offering - other terminations are available

NXT Series R-410A

Ordering Information

Adjustable, Straight-Through Body Style, Individually Packaged

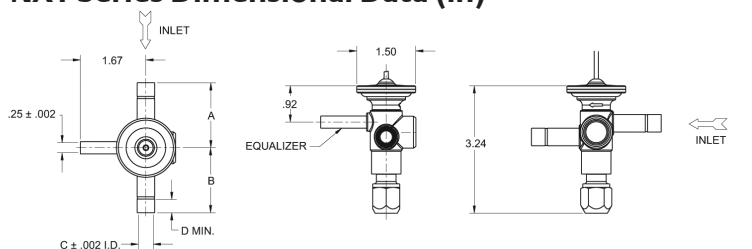
Refrigerant	Capacity (Tons)	Check Valve	Bleed	Inlet X Outlet	Bulb Cap Tube Length	External Equalizer	PCN
R-410A	1/2		-	3/8 ODF X 3/8 ODF	30"	30" With Angle Cut	095064
			15%	3/8 ODF X 3/8 ODF	30"	30" With Angle Cut	095065
	1		-	3/8 ODF X 1/2 ODF	30"	1/4" ODF	095066
		√	-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095000
		√	15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095001
		√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095002
		√	-	3/8 ODF X 1/2 ODF	5 ft	5 ft With Angle Cut	095003
			-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095004
			15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095005
	1-1/2	√	-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095006
		√	15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095007
		√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095008
		√	-	3/8 ODF X 1/2 ODF	5 ft	5 ft With Angle Cut	095009
			-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095010
	2		15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095011
		√	-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095012
		√	15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095013
		√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095014
		√	-	3/8 ODF X 1/2 ODF	5 ft	5 ft With Angle Cut	095015
	3		-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095016
			15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095017
		√	-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095018
		√	15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095019
		√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095020
	4	√	-	3/8 ODF X 1/2 ODF	5 ft	5 ft With Angle Cut	095021
			-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095022
			15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095023
		√	-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095024
		√	15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095025
	5	√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095026
		√	-	3/8 ODF X 1/2 ODF	5 ft	5 ft With Angle Cut	095027
			-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095028
			15%	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095029
		√	-	3/8 ODF X 1/2 ODF	5 ft	1/4" ODF	095030
	6	√	-	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095031
		√	15%	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095032
		√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095033
		√	-	1/2 ODF X 5/8 ODF	5 ft	5 ft With Angle Cut	095034
			15%	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095035
	7	√	-	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095036
		√	15%	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095037
		√	-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095038
		√	-	1/2 ODF X 5/8 ODF	5 ft	5 ft With Angle Cut	095039
			-	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095040
	7		15%	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095041
		√	-	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095042
		√	15%	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095043
√		-	Chatleff X Chatleff	5 ft	5 ft With 1/4" SAE Flare Nut	095044	
√		-	5/8 ODF X 7/8 ODF	5 ft	5 ft With Angle Cut	095045	
	-	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095046		
	15%	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095047		

Ordering Information

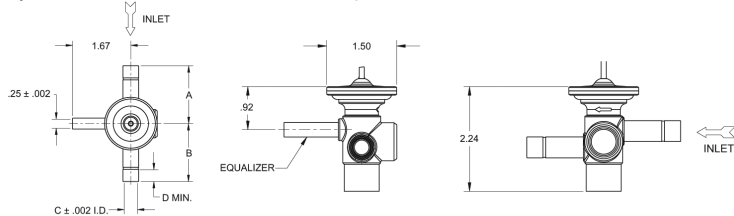
Adjustable, Straight-Through Body Style, Individually Packaged (continued)

Refrigerant	Capacity (Tons)	Check Valve	Bleed	Inlet X Outlet	Bulb Cap Tube Length	External Equalizer	PCN
R-410A	8		-	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095048
			15%	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095049
	10		-	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095050
			15%	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095051
	12		-	1/2 ODF X 5/8 ODF	5 ft	1/4" ODF	095060
			-	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095052
			15%	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095053
			-	5/8 ODF X 1-1/8 ODF	5 ft	1/4" ODF	095054
			-	7/8 ODF X 1-1/8 ODF	5 ft	1/4" ODF	095055
	15		-	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095056
			15%	5/8 ODF X 7/8 ODF	5 ft	1/4" ODF	095057
			-	5/8 ODF X 1-1/8 ODF	5 ft	1/4" ODF	095058
		-	7/8 ODF X 1-1/8 ODF	5 ft	1/4" ODF	095059	

NXT Series Dimensional Data (in)



Adjustable - ODF Connections with 1/4 ODF Equalizer Shown



Non-Adjustable - ODF Connections with 1/4 ODF Equalizer Shown

Connections	Dimension			
	A	B	C	D
3/8 ODF	1.65	1.65	0.379	0.34
1/2 ODF	1.65	1.65	0.504	0.48
5/8 ODF	2.15	2.15	0.629	0.75
7/8 ODF	2.15	2.15	0.879	0.75
1-1/8 ODF	2.40	2.40	1.129	0.91
Chatleff	1.80	1.36	-	-

TXV Connect Kits

Emerson™ TXV Connect kits include our latest generation thermal expansion valves plus chattleff and aeroquip adapters that are easy to install into all residential air conditioning systems.

Features

- ODF TXVs with chattleff and aeroquip adapters
- One valve to fit all systems
- TXV with internal check, bulb strap, and connection options all in one box
- R-410A and R-22 kits in multiple capacities
- Easy field replacement of fixed orifice for increased efficiency

Specifications

- Maximum Working Pressure (MWP): 700 psig
- UL File number (valves): SA 5312

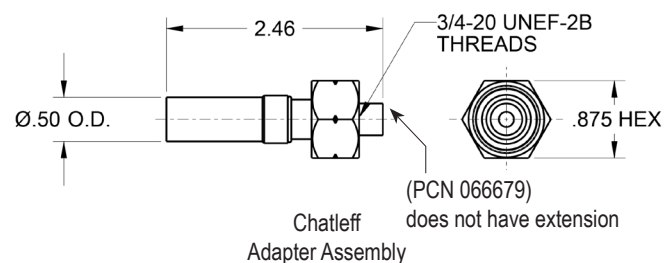
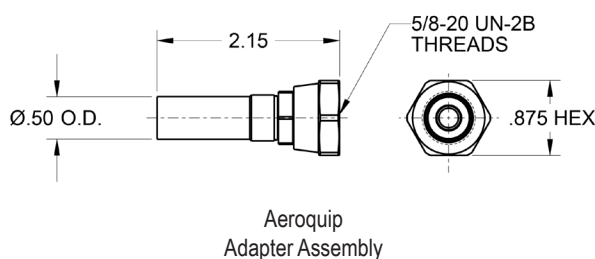


Individual adapter kits

PCN	Description	Capacity(tons)*	Refrigerant
066657	TXV + CONNECT 2½T R-22	1-1/2 to 3	R-22
066658	TXV + CONNECT 5T R-22	3-1/2 to 5	
066660	TXV + CONNECT 1½T R-410A	1-1/2	R-410A
066661	TXV + CONNECT 2T R-410A	2	
066662	TXV + CONNECT 3T R-410A	3	
066663	TXV + CONNECT 4T R-410A	4	
066664	TXV + CONNECT 5T R-410A	5	
066653	CHATLEFF ADAPTER ASSEMBLY	N/A	N/A
066679	CHATLEFF ADAPTER ASSEMBLY	Short	N/A
066654	AEROQUIP ADAPTER ASSEMBLY	N/A	N/A

* For extended capacity tables, use NXT series for R-410A applications and A-Series for R-22

Dimension Data



HF/HFK Series

The HF series is a balanced ported valve designed for refrigeration, air conditioning and heat pump applications.

Features

- Stainless steel replaceable power element eliminates corrosion and prevents valve failure
- Two body sizes provide capacities from 1/4 to 20 tons



NOTE: If the HF body is stamped HFK, then the cage is replaceable.

Standard Body – HF & HFK

- The HF is offered several ways:
 - *Pre-packaged HFK service kits* – Include a mix of bodies and power elements with a complete set of cages to serve the most applications with a minimum of parts
 - *Individual components* – Bodies, cages, & power elements may be ordered separately
 - *Finished valves* – Assembled valves ready for immediate installation
- Bi-Flow capability up to 5-1/2 tons R-22 allows one valve to control the superheat in both cooling and heating modes

Options

- ODF or SAE connections
- Straight-through or angle flow configurations
- Removable inlet strainer (ODF only)
- Internal or external equalizer

Extended Body – HF

- Capacity range from 8 to 20 tons (R-22)
- Finished valve only

Specifications

- Maximum working pressure: 450 psig
- UR/CUR file number: SA 5312

Nomenclature example: HFESC 2 HC 5 FT 3/8 x 1/2 ODF S/T

HF	N	E	S	C	B	2	H	C	5 FT	3/8 x 1/2	ODF	S/T
Valve Series Balanced Port Design	Superheat Adjustment N = Non-Adjustable Omit for Adjustable	Equalizer E=External (Omit for Internal)	Connection Type S = Solder (Omit for SAE Flare)	Removable Inlet Strainer (optional) C = Inlet Strainer (ODF only)	Bleed Hole (optional) (Omit for no bleed hole)	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C * P = R-507 * R = R-502 * S = R-404A *B = R-448A/ R-449A +D = R-450A/ R-513A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp AA = wide range	Capillary Tube Length 5 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2	Connection Type SAE = flare ODF = solder	Configuration ANG = 90° angle S/T = straight-thru

+ = R-12, R-134a R-450A and R-513A are interchangeable refrigerant charges
 * = R-507, R-502, R-404A, R-448A and R-449A are interchangeable refrigerant charges
 • = R-22 and R-407C are interchangeable refrigerant charges

HF Series-Nominal* Capacity Tables in Tons (kW)

Standard Body HF

R-12	R-134a	R-450A/ R-513A	R-22/ R-407C	R-502/ R-404A/ R-507	R-448A/ R-449
1/8 (0.4)	1/4 (0.9)	1/4 (0.7)	1/4 (0.9)	1/8 (0.4)	1/5 (0.7)
1/4 (0.9)	1/2 (1.8)	1/4 (0.9)	1/2 (1.8)	1/4 (0.9)	1/4 (0.9)
1/2 (1.8)	3/4 (2.7)	1/2 (1.8)	1 (3.5)	1/2 (1.8)	1/2 (1.8)
1 (3.5)	1 (3.5)	3/4 (2.7)	1 1/2 (5.3)	1 (3.5)	3/4 (2.7)
1 1/4 (4.4)	1 1/2 (5.3)	1 (3.5)	2 (7.0)	1 1/4 (4.4)	1 (3.5)
1 1/2 (5.3)	1 3/4 (6.2)	1 1/2 (5.3)	2 1/2 (8.8)	1 1/2 (5.3)	1 1/2 (5.3)
2 (7.0)	2 1/2 (8.8)	2 (7.0)	3 (11.0)	2 (7.0)	2 (7.0)
3 1/2 (12.0)	4 (14.0)	3 1/2 (12.0)	5 1/2 (20.0)	3 1/2 (12.0)	3 1/2 (12.0)

Extended Body HF

R-12	R-134a	R-450A/ R-513A	R-22/ R-407C	R-502/ R-404A/ R-507	**R-448A/ R-449
5 (17.0)	6(21.0)	4 1/2 (16.0)	8 (28.0)	5 (17.0)	8 1/2(30.0)
6 (21.0)	7 1/2 (27.0)	6 (21.0)	10 (35.0)	7 (27.0)	10 1/2(37.0)
9 (32.0)	11 (39.0)	9 (32.0)	15 (53.0)	10 (35.0)	16 (56.0)
12 (42.0)	14 (50.0)	14 (50.0)	20 (70.0)	13 (46.0)	20 (70.0)

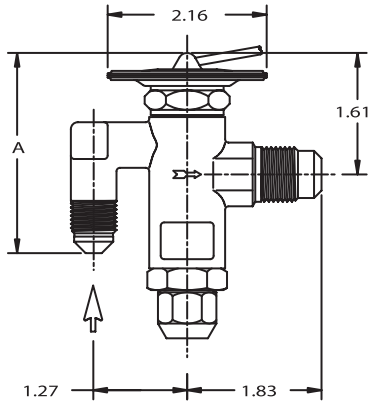
All capacities shown are at 100°F condensing, 40°F evaporator temperature.
 *See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.
 **Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

HF/HFK Series

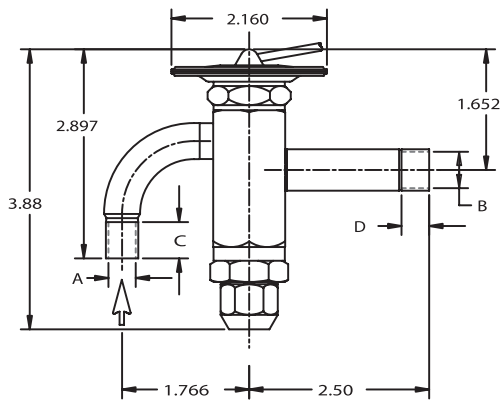
Dimensional Data

Standard Body HF

¼ thru 5½ tons R-22



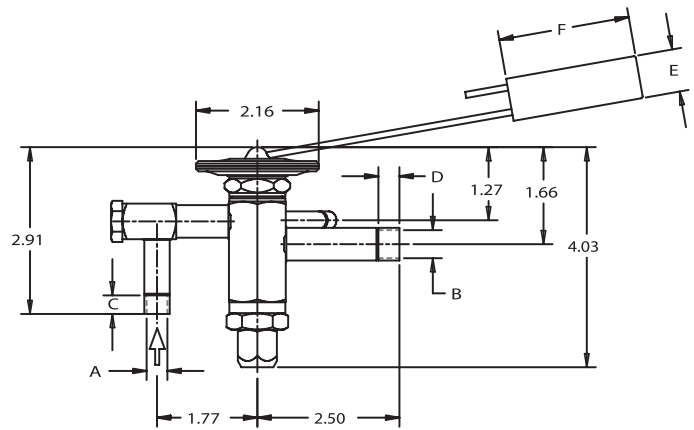
SAE



ODF

HF SAE

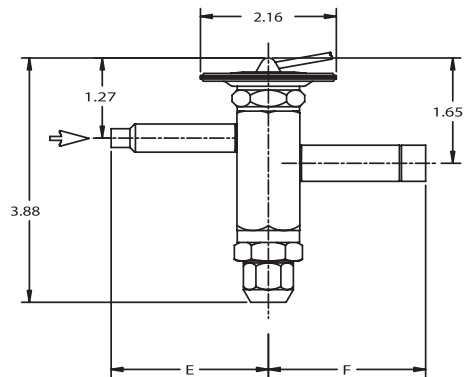
Connection Size		A	B	C
Inlet	Outlet			
1/4 SAE	1/2 SAE	3.11	1.27	1.83
3/8 SAE	1/2 SAE	2.72		



ODF
w/optional strainer
at inlet

Extended Body HF

8, 10, 15 & 20 ton R-22



ODF

HF ODF

Connection Size		A± .002	B± .002	C MIN	D MIN	E	F
Inlet	Outlet						
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.31	2.50	2.50
3/8 ODF	1/2 ODF	0.25	0.50	0.31	0.37		
3/8 ODF	1/2 ODF	0.38	0.50	0.37	0.37		

HF/HFK Series

Ordering Information

Use the following tables to order individual components.

HFK Body Selection Table

PCN	Description	Type	Connections (Inlet x Outlet)
064881	KT-20298-1	HFK	1/4 x 1/2 SAE Ang Inlet
064882	KT-20298-2	HFK	3/8 x 1/2 SAE Ang Inlet
064883	KT-20298-3	HFKE	1/4 x 1/2 SAE Ang Inlet
064884	KT-20298-4	HFKE	3/8 x 1/2 SAE Ang Inlet
064885	KT-20298-5	HFKSC	3/8 x 1/2 ODF Ang Inlet w/ Strainer
064886	KT-20298-6	HFKESC	3/8 x 1/2 ODF Ang Inlet w/ Strainer
064887	KT-20298-7	HFKS	3/8 x 1/2 ODF S/T
064888	KT-20298-8	HFKS	3/8 x 5/8 ODF S/T
064889	KT-20298-9	HFKS	1/2 x 5/8 ODF S/T
064890	KT-20298-10	HFKS	1/2 x 7/8 ODF S/T
064891	KT-20298-11	HFKES	3/8 x 1/2 ODF S/T
064892	KT-20298-12	HFKES	3/8 x 5/8 ODF S/T
064895	KT-20298-13	HFKES	1/2 x 5/8 ODF S/T
064896	KT-20298-14	HFKES	1/2 x 7/8 ODF S/T

Standard Product Offering

HF & HFK Power Element Table

PCN	Description	System Refrigerant(s)	Application
053769	X26300-FW15-1	R-134a/R-12	Low Temp MOP
054798	X26300-FW35-1	R-134a/R-12	Low Temp MOP
063869	X26300-FW55-1	R-134a/R-12	Low Temp MOP
053766	X26300-FZ-1	R-134a/R-12	Low Temp
053763	X26300-FC-1	R-134a/R-12	Medium Temp
058074	X26300-MC-1	R-134a	Medium Temp
053767	X26300-HZ-1	R-22/R-407C	Low Temp
057834	X26300-HCA-1	R-22/R-407C	Heat Pump
057764	X26300-HW100-1	R-22/R-407C	AC MOP
053764	X26300-HC-1	R-22/R-407C	A/C Med. Temp
058085	X26300-SW45-1	R-404/ R-507/ R-502	Low Temp MOP
058082	X26300-SZ-1	R-404/ R-507/ R-502	Low Temp
058083	X26300-SC-1	R-404/ R-507/ R-502	Medium Temp

Standard Product Offering

HFK Cage Nominal* Capacity Table

PCN	Description ¹	Cage Code	R-12	R-22	R-134a	R-404	R-507	R-502	R-407C
064868	KT-20299-0	0	1/8	1/4	1/4	1/8	1/8	1/8	1/4
064869	KT-20299-1	1	1/4	1/2	1/2	1/4	1/4	1/4	1/2
064870	KT-20299-2	2	1/2	1	3/4	1/2	1/2	1/2	1
064871	KT-20299-3	3	1	1 1/2	1	1	1	1	1 1/2
064872	KT-20299-4	4	1 1/4	2	1 1/2	1 1/4	1 1/4	1 1/4	2
064873	KT-20299-5	5	1 1/2	2 1/2	1 3/4	1 1/2	1 1/2	1 1/2	2 1/2
064874	KT-20299-6	6	2	3	2 1/2	2	2	2	3
064875	KT-20299-7	7	3 1/2	5 1/2	4	3 1/2	3 1/2	3 1/2	5 1/2

¹ Cage Kit includes Cage, Insertion Tool and ID Clips.

*All capacities shown are at 100°F condensing, 40°F evaporator temperature.

See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

Standard Product Offering

Cage Kit (PCN 064879)

Item	Qty
Size 0 Cage (1/4 ton R-22)	2
Size 1 Cage (1/2 ton R-22)	2
Size 2 Cage (1 ton R-22)	2
Size 3 Cage (1 1/2 ton R-22)	2
Size 4 Cage (2 ton R-22)	2
Size 5 Cage (2 1/2 ton R-22)	2
Size 6 Cage (3 ton R-22)	2
Size 7 Cage (5 1/2 ton R-22)	2
Insertion Tool	1
Oil Bottle	1
Cage ID Tags	16

Replacement Parts – SAE Inlet

PCN	Part Number	Description
027385	X-11176-1	Filter Screen
058707	27676-1	Seal Cap

Replacement Parts- HFSC & HFESC Only

PCN	Kit Number	Description
057686	KT-20264	Includes seal cap, gasket o-ring, screen, spring

HFK Accessories

PCN	Description
064897	Cage Box (Empty)
064898	Insertion Tool
064899	Oil Bottle
065203	Cage Gasket Kit (12 sets)

Standard Product Offering

HF/HFK Series

Ordering Information

HFK Pre-Packaged Kits

The HFK is a pre-packaged kit consisting of a mix of popular bodies and power elements with a complete selection of cages. These kits provide great flexibility allowing valves to be assembled as needed for each application. Three kits are provided as shown below, along with the cage kit which is included in each pre-packaged kit. In addition, custom kits can be assembled by stocking an empty kit case with desired components.



SAE/ODF Kit (PCN 065135)

Item	Qty
HFK 3/8 x 1/2 SAE ANG	1
HFKE 3/8 x 1/2 SAE ANG	1
HFKS 3/8 x 1/2 ODF S/T	1
HFKES 3/8 x 1/2 ODF S/T	1
Cage Kit (PCN 064879)	1
Insertion Tool (PCN 064898)	1
Service Box	1
FC Power Element	1
FZ Power Element	1
HC Power Element	1
HZ Power Element	1
SC Power Element	1
SW45 Power Element	1

SAE Kit (PCN 064876)

Item	Qty
HFK 1/4 X 1/2 Body	1
HFK 3/8 X 1/2 Body	1
HFKE 3/8 X 1/2 Body	2
FC Power Element	2
HC Power Element	1
HZ Power Element	1
SZ Power Element	2
Cage Kit (PCN 064879)	1

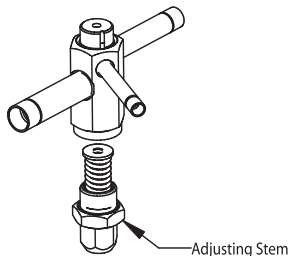
ODF Kit (PCN 064877)

Item	Qty
HFKSC 3/8 X 1/2 Body	1
HFKES 3/8 X 1/2 Body	1
HFKESC 3/8 X 1/2 Body	2
FC Power Element	2
HC Power Element	1
HZ Power Element	1
SZ Power Element	2
Cage Kit (PCN 064879)	1

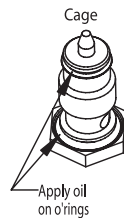
Cage Kit (PCN 064879)

Item	Qty
Size 0 Cage (1/4 ton R-22)	2
Size 1 Cage (1/2 ton R-22)	2
Size 2 Cage (1 ton R-22)	2
Size 3 Cage (1 1/2 ton R-22)	2
Size 4 Cage (2 ton R-22)	2
Size 5 Cage (2 1/2 ton R-22)	2
Size 6 Cage (3 ton R-22)	2
Size 7 Cage (5 1/2 ton R-22)	2
Insertion Tool	1
Oil Bottle	1
Cage ID Tags	16

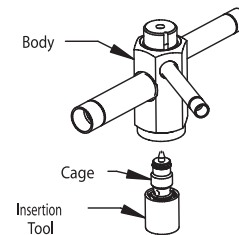
HFK Assembly Procedure (see 6 assembly steps & diagrams below)



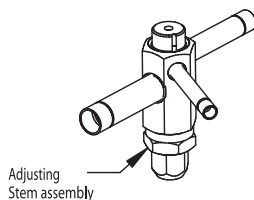
1. Remove adjusting stem assembly from body with 15/16" wrench.



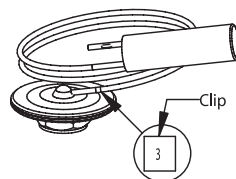
2. Lubricate both o-rings on cage.



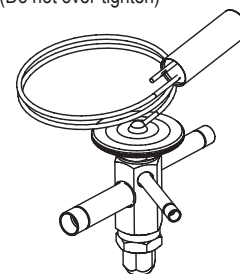
3. Insert cage into body with driver and insertion tool and hand tighten. (Do not over-tighten)



4. Replace adjustment stem assembly to body and hand tighten. Use the 15/16" wrench to tighten adjustment stem assembly 60° or one wrench flat. (300-360 inch lbs. - Do not over-tighten)



5. Attach cage identification clip on power element cap tube.



6. Screw power element to top of valve body and hand tighten. Use the 1" wrench to tighten power element 60° or one wrench flat. (300-360 inch lbs. - Do not over-tighten)

HF/HFK Series

Ordering Information

Use the following tables to order factory assembled valves.

HF Series – Internally Equalized						
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HF HFS	1/4	FC	1/4 X 1/2 SAE ANG	5 FT	009811
			FC	3/8 X 1/2 SAE ANG	5 FT	054134
		1/2	FC	1/4 X 1/2 SAE ANG	5 FT	009810
			FC	3/8 X 1/2 ODF ANG	5 FT	056063
			FC	3/8 X 1/2 ODF S/T	5 FT	056013
			FC	3/8 X 1/2 SAE	5 FT	054966
			FC	3/8 X 1/2 SAE ANG	5 FT	054892
		1	FC	3/8 X 1/2 ODF S/T	5 FT	056119
		FC	3/8 X 1/2 SAE ANG	5 FT	057619	
		1-1/2	FC	3/8 X 1/2 SAE ANG	5 FT	054914
2	FC	3/8 X 1/2 SAE	5 FT	053060		
R-134a R-12 R-450A R-513A	HF HFS	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	058545
			MC	3/8 X 1/2 SAE ANG	5 FT	057618
		1/2	MC	3/8 X 1/2 ODF S/T	5 FT	058100
			MC	3/8 X 1/2 SAE ANG	5 FT	057620
1	MC	3/8 X 1/2 ODF S/T	5 FT	065641		
R-22 R-407C	HF HFS	1/4	HC	1/4 X 1/2 SAE ANG	5 FT	058430
			HC	3/8 X 1/2 ODF ANG	5 FT	055493
			HC	3/8 X 1/2 ODF S/T	5 FT	055633
			HC	3/8 X 1/2 SAE	5 FT	054921
			HZ	1/4 X 1/2 SAE ANG	5 FT	059653
			HZ	3/8 X 1/2 ODF S/T	5 FT	056169
		1/2	HC	1/4 X 1/2 SAE ANG	5 FT	009812
			HC	3/8 X 1/2 ODF ANG	5 FT	054723
			HC	3/8 X 1/2 ODF S/T	5 FT	054136
			HC	3/8 X 1/2 SAE	5 FT	054135
		1	HZ	3/8 X 1/2 SAE	5 FT	054364
			HC	3/8 X 1/2 ODF ANG	5 FT	055702
			HC	3/8 X 1/2 ODF S/T	5 FT	055928
			HC	3/8 X 1/2 SAE	5 FT	054927
		1-1/2	HZ	3/8 X 1/2 SAE	5 FT	054928
			HC	3/8 X 1/2 ODF ANG	5 FT	055969
			HC	3/8 X 1/2 ODF S/T	5 FT	056018
		2	HC	3/8 X 1/2 SAE	5 FT	054933
			HC	3/8 X 1/2 SAE	5 FT	054939
		2-1/2	HZ	3/8 X 1/2 SAE	5 FT	054940
			HC	3/8 X 1/2 SAE	5 FT	054947
		3	HC	3/8 X 1/2 SAE	5 FT	053316
			HC	3/8 X 1/2 ODF S/T	5 FT	053915

Standard Product Offering

HF/HFK Series

Ordering Information (continued)

Use the following tables to order factory assembled valves.

HF Series – Internally Equalized						
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-404A R-507 R-502 **R-448A **R-449A	HF HFS	1/4	SC	1/4 X 1/2	30 IN	066516
			SW45	1/4 X 1/2	30 IN	066517
			SZ	1/4 X 1/2	30 IN	066518
		1/2	SC	1/4 X 1/2	30 IN	066519
			SW45	1/4 X 1/2	30 IN	066520
			SZ	1/4 X 1/2	30 IN	066521
		1	SC	3/8 X 1/2 ODF S/T	5 FT	065643
			SW45	3/8 X 1/2	5 FT	066522
			SZ	3/8 X 1/2	5 FT	066523
		1-1/2	SC	3/8 X 1/2	5 FT	066524
			SW45	3/8 X 1/2	5 FT	066525
			SZ	3/8 X 1/2	5 FT	066526
		2	SC	3/8 X 1/2	5 FT	066527
			SW45	3/8 X 1/2	5 FT	066528
			SZ	3/8 X 1/2	5 FT	066529
3-1/2	SC	3/8 X 1/2	5 FT	066530		
	SW45	3/8 X 1/2	5 FT	066531		
	SZ	3/8 X 1/2	5 FT	066532		
R-502	HF HFS	1/4	RC	1/4 X 1/2 SAE ANG	5 FT	059304
			RC	3/8 X 1/2 ODF ANG	5 FT	055490
			RC	3/8 X 1/2 SAE	5 FT	054137
			RZ	1/4 X 3/8 ODF S/T	5 FT	055792
			RZ	3/8 X 1/2 ODF S/T	5 FT	056228
		1/2	RZ	3/8 X 1/2 SAE	5 FT	054369
			RC	3/8 X 1/2 SAE	5 FT	054964
			RZ	3/8 X 1/2 ODF ANG	5 FT	055874
		1	RZ	3/8 X 1/2 ODF S/T	5 FT	056008
			RZ	3/8 X 1/2 SAE	5 FT	054965
			RC	3/8 X 1/2 SAE	5 FT	054976
		1-1/2	RC	3/8 X 1/2 SAE ANG	5 FT	054905
			RZ	3/8 X 1/2 ODF ANG	5 FT	055785
			RZ	3/8 X 1/2 SAE	5 FT	054977
		2	RC	3/8 X 1/2 SAE	5 FT	054984
			RZ	3/8 X 1/2 SAE	5 FT	054986
		3-1/2	RC	3/8 X 1/2 SAE	5 FT	053061
		RC	3/8 X 1/2 SAE	5 FT	055936	

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

Standard Product Offering

HF/HFK Series

Ordering Information (continued)

HF Series – Externally Equalized (continued)						
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HFE HFES	1/4	FC	3/8 X 1/2 SAE ANG	5 FT	054360
			FC	1/4 X 1/2 SAE ANG	5 FT	009955
		1/2	FC	3/8 X 1/2 ODF ANG	5 FT	056021
			FC	3/8 X 1/2 ODF S/T	5 FT	056331
			FC	3/8 X 1/2 SAE ANG	5 FT	054895
			FC	3/8 X 1/2 ODF ANG	5 FT	055993
		1	FC	3/8 X 1/2 ODF S/T	5 FT	056151
			FC	3/8 X 1/2 SAE ANG	5 FT	054909
			FC	3/8 X 1/2 ODF ANG	5 FT	055994
		1-1/2	FC	3/8 X 1/2 SAE ANG	5 FT	054917
			FC	3/8 X 1/2 ODF S/T	5 FT	053266
		2	FC	3/8 X 1/2 SAE ANG	5 FT	053069
			FC	3/8 X 1/2 SAE ANG	5 FT	054138
		R-134a R-12 R-450A R-513A	HFE HFES	1/4	MC	3/8 X 1/2 SAE ANG
1/2	MC			3/8 X 1/2 ODF S/T	5 FT	065645
	MC			3/8 X 1/2 SAE ANG	5 FT	057616
3/4	MC			3/8 X 1/2 ODF ANG	5 FT	057784
	MC			3/8 X 1/2 SAE ANG	30 IN	057861
1	MC			3/8 X 1/2 ODF S/T	5 FT	059422
	MC			3/8 X 1/2 ODF ANG	5 FT	058546
	MC			3/8 X 1/2 ODF S/T	5 FT	065646
1-1/2	MC			3/8 X 1/2 SAE ANG	5 FT	057617
	MC			3/8 X 1/2 SAE ANG	5 FT	057895
1-3/4	MC			3/8 X 1/2 ODF S/T	5 FT	065647
	MC			3/8 X 1/2 SAE	5 FT	058152
	MC			3/8 X 1/2 SAE ANG	5 FT	057896
4	MC			3/8 X 1/2 SAE ANG	5 FT	057897
	MC	5/8 X 7/8 ODF S/T	5 FT	057903		
11	MC	5/8 X 7/8 ODF S/T	5 FT	057906		
	MC	7/8 X 1 1/8 ODF S/T	5 FT	058681		
14	MC	7/8 X 1 3/8 ODF S/T	5 FT	064000		
	MC	7/8 X 1 3/8 ODF S/T	5 FT	055927		
R-22 R-407C	HFE HFES	1/4	HC	3/8 X 1/2 ODF S/T	5 FT	054924
			HC	3/8 X 1/2 SAE	5 FT	054925
			HZ	3/8 X 1/2 SAE	5 FT	054925
		1/2	HC	1/4 X 1/2 SAE ANG	5 FT	059079
			HC	3/8 X 1/2 ODF ANG	5 FT	054838
			HC	3/8 X 1/2 ODF S/T	5 FT	055827
			HC	3/8 X 1/2 SAE	5 FT	054361
			HZ	3/8 X 1/2 ODF S/T	5 FT	055889
			HZ	3/8 X 1/2 SAE	5 FT	054365
		1	HC	3/8 X 1/2 ODF ANG	5 FT	055494
			HC	3/8 X 1/2 ODF S/T	5 FT	055708
			HC	3/8 X 1/2 SAE	5 FT	054930
			HW 35	3/8 X 1/2 SAE	5 FT	054932
			HZ	3/8 X 1/2 SAE	5 FT	054931
		1-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	055495
			HC	3/8 X 1/2 ODF S/T	5 FT	055863
			HC	3/8 X 1/2 SAE	5 FT	054936
			HZ	3/8 X 1/2 ODF S/T	5 FT	055870
			HZ	3/8 X 1/2 SAE	5 FT	054937
		2	HC	3/8 X 1/2 ODF S/T	5 FT	055706
			HC	3/8 X 1/2 SAE	5 FT	054942
			HC	3/8 X 1/2 ODF ANG	5 FT	054946
		2-1/2	HZ	3/8 X 1/2 SAE	5 FT	054943
			HC	3/8 X 1/2 ODF ANG	5 FT	056042
			HC	3/8 X 1/2 ODF S/T	5 FT	055931
		3	HC	3/8 X 1/2 SAE	5 FT	054950
			HC	3/8 X 1/2 ODF ANG	5 FT	054756
			HC	3/8 X 1/2 ODF S/T	5 FT	053916
			HC	3/8 X 1/2 SAE	5 FT	053317
HC	1/2 X 5/8 ODF ANG		5 FT	064761		
HCA	3/8 X 1/2 ODF S/T		5 FT	058648		
HCA	1/2 X 5/8 ODF S/T		5 FT	061730		
HZ	3/8 X 1/2 ODF S/T		5 FT	055924		
HZ	3/8 X 1/2 SAE	5 FT	053191			

HF/HFK Series

Ordering Information (continued)

HF Series – Externally Equalized (continued)								
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN		
R-22 R-407C	HFE HFES	5-1/2	HC	3/8 X 1/2 ODF S/T	5 FT	054141		
			HC	3/8 X 1/2 SAE	5 FT	054140		
			HC	1/2 X 5/8 ODF ANG	5 FT	054778		
			HC	1/2 X 7/8 ODF S/T	5 FT	055187		
			HC	5/8 X 7/8 ODF S/T	5 FT	054779		
			HCA	3/8 X 1/2 ODF S/T	5 FT	065649		
			HCA	1/2 X 5/8 ODF ANG	5 FT	057378		
			HZ	3/8 X 1/2 ODF S/T	5 FT	054780		
		8	HZ	3/8 X 1/2 SAE	5 FT	054777		
			HC	1/2 X 5/8 ODF S/T	5 FT	057312		
			HC	5/8 X 1 1/8 ODF ST	5 FT	057313		
			HCA	1/2 X 7/8 ODF S/T	5 FT	056818		
			HCA	5/8 X 1 1/8 ODF ST	5 FT	056819		
			HC	1/2 X 5/8 ODF S/T	5 FT	057315		
		10	HC	5/8 X 7/8 ODF S/T	5 FT	057256		
			HC	7/8 X 1 1/8 ODF S/T	5 FT	057316		
			HCA	5/8 X 7/8 ODF S/T	5 FT	056820		
		12	HCA	5/8 X 1 1/8 ODF S/T	5 FT	056821		
			HC	5/8 X 1 1/8 ODF S/T	5 FT	062737		
		15	HC	5/8 X 7/8 ODF S/T	5 FT	057317		
			HC	7/8 X 1 1/8 ODF S/T	5 FT	057318		
			HCA	5/8 X 1 1/8 ODF S/T	5 FT	056824		
			HCA	5/8 X 7/8 ODF S/T	5 FT	056823		
		20	HCA	7/8 X 1 1/8 ODF S/T	5 FT	056825		
HC	7/8 X 1 1/8 ODF S/T		5 FT	062055				
R-404A R-507 R-502 **R-448A **R-449A	HFE HFES	1/4	SC	1/4 x 1/2 ODF S/T	30 IN	066533		
			SW 45	3/8 X 1/2 ODF S/T	5 FT	065734		
			SW 45	3/8 X 1/2 SAE ANG	5 FT	066623		
		1/2	SZ	3/8 X 1/2 ODF S/T	5 FT	065733		
			SC	3/8 X 1/2 ODF ANG	5 FT	058975		
			SW 45	3/8 X 1/2 ODF S/T	5 FT	065736		
			SW 45	3/8 X 1/2 SAE ANG	5 FT	066040		
			SZ	3/8 X 1/2 ODF ANG	5 FT	058995		
			SZ	3/8 X 1/2 ODF S/T	5 FT	065735		
		1	SC	3/8 X 1/2 ODF S/T	5 FT	065650		
			SC	3/8 X 1/2 ODF ANG	5 FT	058976		
			SW 45	3/8 X 1/2 ODF ANG	5 FT	059086		
			SW 45	3/8 X 1/2 SAE ANG	5 FT	066624		
			SW 45	3/8 X 1/2 ODF S/T	5 FT	065651		
			SZ	3/8 X 1/2 ODF S/T	5 FT	064289		
			SZ	3/8 X 1/2 ODF ANG	5 FT	058977		
		1-1/4	SW 45	3/8 X 1/2 ODF S/T	5 FT	057976		
			SZ	3/8 X 1/2 ODF S/T	5 FT	065737		
			SC	3/8 X 1/2 ODF S/T	5 FT	057974		
		1-1/2	SW 45	3/8 X 1/2 ODF S/T	5 FT	065738		
			SW 45	3/8 X 1/2 SAE ANG	5 FT	066625		
			SZ	3/8 X 1/2 ODF S/T	5 FT	064290		
		2	SC	3/8 X 1/2 ODF S/T	5 FT	057958		
			SW 45	3/8 X 1/2 ODF S/T	5 FT	065740		
			SW 45	3/8 X 1/2 SAE ANG	5 FT	066627		
			SZ	3/8 X 1/2 ODF S/T	5 FT	065739		
		3-1/2	SC	3/8 X 1/2 ODF S/T	5 FT	065652		
			SW 45	5/8 X 7/8 ODF S/T	5 FT	062151		
			SZ	1/2 X 5/8 ODF S/T	5 FT	066534		
		5	SZ	1/2 X 5/8 ODF S/T	5 FT	061694		
			SC	5/8 X 7/8 ODF S/T	5 FT	066535		
			SW 45	5/8 X 7/8 ODF S/T	5 FT	064170		
		7	SZ	5/8 X 7/8 ODF S/T	5 FT	058451		
			SC	5/8 X 7/8 ODF S/T	5 FT	066536		
			SW45	5/8 X 7/8 ODF S/T	5 FT	066537		
		10	SZ	5/8 X 7/8 ODF S/T	5 FT	064291		
			SC	5/8 X 7/8 ODF S/T	5 FT	066538		
			SW 45	5/8 X 7/8 ODF S/T	5 FT	064195		
					SZ	5/8 X 7/8 ODF S/T	5 FT	062828

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

Standard Product Offering

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

HF/HFK Series

Ordering Information (continued)

HF Series – Externally Equalized (continued)									
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN			
R-502	HFE HFES	1/4	RC	3/8 X 1/2 SAE	5 FT	054366			
			RC	3/8 X 1/2 ODF ANG	5 FT	055092			
			RZ	3/8 X 1/2 ODF ANG	5 FT	055491			
			RZ	3/8 X 1/2 SAE	5 FT	054370			
		1/2	RC	3/8 X 1/2 ODF ANG	5 FT	055992			
			RC	3/8 X 1/2 ODF S/T	5 FT	056022			
			RC	3/8 X 1/2 SAE	5 FT	054967			
			RW 45	3/8 X 1/2 ODF ANG	5 FT	055996			
			RW 45	3/8 X 1/2 SAE	5 FT	054969			
			RZ	3/8 X 1/2 ODF ANG	5 FT	055497			
			RZ	3/8 X 1/2 ODF S/T	5 FT	056024			
			RZ	3/8 X 1/2 SAE	5 FT	054968			
			R-502	HFE HFES	1	RC	3/8 X 1/2 ODF ANG	5 FT	054983
						RC	3/8 X 1/2 ODF S/T	5 FT	056029
RC	3/8 X 1/2 SAE	5 FT				054979			
RW 45	3/8 X 1/2 SAE	5 FT				054981			
RZ	3/8 X 1/2 ODF ANG	5 FT				055496			
RZ	3/8 X 1/2 ODF S/T	5 FT				056225			
RZ	3/8 X 1/2 SAE	5 FT				054980			
RZ	3/8 X 1/2 SAE	5 FT				054988			
1-1/2	RC	3/8 X 1/2 ODF ANG			5 FT	055657			
	RC	3/8 X 1/2 ODF S/T			5 FT	056031			
	RC	3/8 X 1/2 SAE			5 FT	054988			
	RW 45	3/8 X 1/2 ODF ANG			5 FT	055991			
	RW 45	3/8 X 1/2 ODF S/T			5 FT	056032			
	RW 45	3/8 X 1/2 SAE			5 FT	054990			
	RZ	3/8 X 1/2 ODF ANG			5 FT	055498			
	RZ	3/8 X 1/2 SAE			5 FT	054989			
2	RC	3/8 X 1/2 ODF ANG			5 FT	054768			
	RC	3/8 X 1/2 ODF S/T			5 FT	053270			
	RC	3/8 X 1/2 SAE			5 FT	053070			
	RW 45	3/8 X 1/2 SAE			5 FT	054992			
	RZ	3/8 X 1/2 ODF S/T			5 FT	053271			
	RZ	3/8 X 1/2 ODF ANG			5 FT	054844			
	RZ	3/8 X 1/2 SAE			5 FT	053071			
	RZ	3/8 X 1/2 SAE			5 FT	053071			
3-1/2	RC	3/8 X 1/2 ODF ANG			5 FT	054783			
	RC	3/8 X 1/2 ODF S/T			5 FT	054143			
	RC	3/8 X 1/2 SAE			5 FT	054142			
	RW 45	3/8 X 1/2 ODF ANG			5 FT	058907			
	RZ	3/8 X 1/2 ODF ANG	5 FT	054785					
	RZ	3/8 X 1/2 ODF S/T	5 FT	054784					
	RZ	3/8 X 1/2 SAE	5 FT	054145					
	RZ	3/8 X 1/2 SAE	5 FT	054145					
5	RC	3/8 X 1/2 ODF S/T	5 FT	058875					
	RC	5/8 X 7/8 ODF S/T	5 FT	058608					
	RW 45	5/8 X 7/8 ODF S/T	5 FT	058305					
	RZ	1/2 X 5/8 ODF ANG	5 FT	061196					
7	RC	5/8 X 7/8 ODF S/T	5 FT	058607					
	RW 45	5/8 X 7/8 ODF S/T	5 FT	059291					
10	RC	5/8 X 7/8 ODF S/T	5 FT	058808					

* For interchangeable refrigerant charges R-134a/R-12, R-450A/R-513A, R-404A/R-507/R-502, R-448A/R-449A and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected?

Solution: From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

Standard Product Offering

HF/HFK Series

Ordering Information (continued)

HFESC Series – Externally Equalized (continued)						
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-12	HFESC	1/2	FC	3/8 X 1/2 ODF ANG	5 FT	057397
		1	FC	3/8 X 1/2 ODF ANG	5 FT	057398
		1-1/2	FC	3/8 X 1/2 ODF ANG	5 FT	057399
R-134a R-12 R-450A R-513A	HFESC	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	057572
		1/2	MC	3/8 X 1/2 ODF ANG	5 FT	058069
		1	MC	3/8 X 1/2 ODF ANG	5 FT	057570
		1-1/2	MC	3/8 X 1/2 ODF ANG	5 FT	057568
R-22 R-407C	HFESC	1/4	HC	3/8 X 1/2 ODF ANG	5 FT	057409
			HZ	3/8 X 1/2 ODF ANG	5 FT	057428
		1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057291
			HZ	3/8 X 1/2 ODF ANG	5 FT	057429
		1	HC	3/8 X 1/2 ODF ANG	5 FT	057410
			HZ	3/8 X 1/2 ODF ANG	5 FT	057430
		1-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057292
			HZ	3/8 X 1/2 ODF ANG	5 FT	057321
		2	HC	3/8 X 1/2 ODF ANG	5 FT	057433
			HZ	3/8 X 1/2 ODF ANG	5 FT	057294
		2-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057411
			HZ	3/8 X 1/2 ODF ANG	5 FT	057434
		3	HC	3/8 X 1/2 ODF ANG	5 FT	057412
			HZ	3/8 X 1/2 ODF ANG	5 FT	057748
		5-1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057781
			HC	3/8 X 1/2 ODF ANG	5 FT	058609
		1/4	SC	1/4 x 1/2 ODF ANG	30 IN	066539
			SW45	1/4 x 1/2 ODF ANG	30 IN	066540
			SZ	1/4 x 1/2 ODF ANG	30 IN	066542
		1/2	SC	1/4 x 1/2 ODF ANG	30 IN	066543
			SW45	1/4 x 1/2 ODF ANG	30 IN	066544
			SZ	1/4 x 1/2 ODF ANG	30 IN	066545
		1	SC	3/8 x 1/2 ODF ANG	5 FT	058135
			SW45	3/8 x 1/2 ODF ANG	5 FT	058157
			SZ	3/8 x 1/2 ODF ANG	5 FT	058118
		1-1/2	SC	3/8 x 1/2 ODF ANG	5 FT	058119
			SW45	3/8 x 1/2 ODF ANG	5 FT	058136
			SZ	3/8 x 1/2 ODF ANG	5 FT	058121
		2	SC	3/8 x 1/2 ODF ANG	5 FT	058122
			SW45	3/8 x 1/2 ODF ANG	5 FT	058212
			SZ	3/8 x 1/2 ODF ANG	5 FT	058214
		3-1/2	SC	3/8 x 1/2 ODF ANG	5 FT	058071
			SW45	3/8 x 1/2 ODF ANG	5 FT	066547
			SZ	3/8 x 1/2 ODF ANG	5 FT	066548
		5	SC	3/8 x 1/2 ODF ANG	5 FT	058220
			SW45	3/8 x 1/2 ODF ANG	5 FT	058221
SZ	3/8 x 1/2 ODF ANG		5 FT	066549		
7	SC	5/8 x 7/8 ODF ANG	5 FT	065458		
	SW45	5/8 x 7/8 ODF ANG	5 FT	066550		
	SZ	5/8 x 7/8 ODF ANG	5 FT	064058		
10	SC	5/8 x 7/8 ODF ANG	5 FT	064219		
	SW45	5/8 x 7/8 ODF ANG	5 FT	066551		
	SZ	5/8 x 7/8 ODF ANG	5 FT	064059		
R-404A R-507 R-502 **R-448A **R-449A	HFESC	1/4	RC	3/8 X 1/2 ODF ANG	5 FT	057436
			RZ	3/8 X 1/2 ODF ANG	5 FT	057454
		1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057437
			RZ	3/8 X 1/2 ODF ANG	5 FT	057455
		1	RC	3/8 X 1/2 ODF ANG	5 FT	057438
			RW 45	3/8 X 1/2 ODF ANG	5 FT	057446
			RZ	3/8 X 1/2 ODF ANG	5 FT	057456
		1-1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057439
			RW 45	3/8 X 1/2 ODF ANG	5 FT	057448
		2	RZ	3/8 X 1/2 ODF ANG	5 FT	057322
			RC	3/8 X 1/2 ODF ANG	5 FT	057440
		2-1/2	RZ	3/8 X 1/2 ODF ANG	5 FT	057457
			RC	3/8 X 1/2 ODF ANG	5 FT	057441
		5	RZ	3/8 X 1/2 ODF ANG	5 FT	057458
			RC	3/8 X 1/2 ODF ANG	5 FT	058595
			RZ	3/8 X 1/2 ODF ANG	5 FT	059654

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

HF/HFK Series

Ordering Information (continued)

HFSC Internal Equalized						
Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN
R-134a	HFSC	1/4	MC	3/8 X 1/2 ODF ANG	5 FT	057573
R-12		1/2	MC	3/8 X 1/2 ODF ANG	5 FT	058067
R-450A						
R-513A						
R-22	HFSC	1/4	HC	3/8 X 1/2 ODF ANG	5 FT	057467
R-407C		1/2	HC	3/8 X 1/2 ODF ANG	5 FT	057293
			HZ	3/8 X 1/2 ODF ANG	5 FT	057482
		1	HC	3/8 X 1/2 ODF ANG	5 FT	057468
		2	HC	3/8 X 1/2 ODF ANG	5 FT	057470
R-404A R-507 R-502 **R-448A **R-449A	HFSC	1/8	SC	3/8 X 1/2 ODF ANG	5 FT	058248
			SW45	1/4 X 1/2 ODF ANG	30 IN	066552
			SZ	1/4 X 1/2 ODF ANG	30 IN	066553
		1/4	SC	3/8 X 1/2 ODF ANG	5 FT	058249
			SW45	1/4 X 1/2 ODF ANG	30 IN	066554
		1/2	SZ	1/4 X 1/2 ODF ANG	30 IN	066555
			SC	3/8 X 1/2 ODF ANG	5 FT	058250
			SW45	1/4 X 1/2 ODF ANG	30 IN	066556
		1	SZ	1/4 X 1/2 ODF ANG	30 IN	066557
			SC	3/8 X 1/2 ODF ANG	5 FT	058251
			SW45	3/8 X 1/2 ODF ANG	5 FT	066558
		1-1/4	SZ	3/8 X 1/2 ODF ANG	5 FT	066559
			SC	3/8 X 1/2 ODF ANG	5 FT	058252
			SW45	3/8 X 1/2 ODF ANG	5 FT	066560
R-502	HFSC	1/4	RC	3/8 X 1/2 ODF ANG	5 FT	057487
			RZ	3/8 X 1/2 ODF ANG	5 FT	057484
		1/2	RC	3/8 X 1/2 ODF ANG	5 FT	057488
			RZ	3/8 X 1/2 ODF ANG	5 FT	057485
		1	RC	3/8 X 1/2 ODF ANG	5 FT	057489
			RZ	3/8 X 1/2 ODF ANG	5 FT	057486

* For interchangeable refrigerant charges R-134a/R-12, R-450A/R-513A, R-404A/R-507/R-502, R-448A/R-449A and R-22/R-407C, the tons of capacity shown in the table are for the first (primary) refrigerant listed. Consult the Nominal Capacity Table for determining the tons of capacity for the secondary refrigerants listed.

**Use SZ charge for all R-448A/R-449A applications. Recommend oversizing the valve capacity by 50% for low temperature applications.

Example: A 1/4 ton R-12 valve is required. What R-134a ton valve should be selected? **Solution:** From the Nominal Capacity Table, a 1/2 ton R-134a valve is equivalent to a 1/4 ton R-12 valve.

Standard Product Offering

TRAE+ Series

The TRAE Plus series is a large capacity valve designed for refrigeration, air conditioning, heat pump, and chiller applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Suitable for Bi-Flow applications
- Replaceable power element and cage assembly for full serviceability
- Double balanced port design improves operation and stability over wide loads and evaporator temperature ranges
- Square body with straight-thru connections
- Solid copper connections
- External superheat adjustment
- Large diaphragm provides superior stability
- Permanent inlet strainer



Options

- Cages (For available cage kits, see page 26.)

Specifications

- Maximum working pressure: 450 psig
- Torque Power Assembly: 375 - 425 in. lb.
- UR/CUR file number: SA 5312

Nomenclature

example: TRAE+ 30 HC 10 FT 7/8 x 1/8 ODF S/T

TRA	E	+	30	H	C	10 FT	7/8 x 1/8	ODF	S/T
Valve Series Double Balanced Port Design	Equalizer E=External 1/4"SAE	Replaceable Components Cage and Power Assembly	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R-404A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length 10 FT (std)	Inlet x Outlet Connection Sizes 5/8 x 7/8 7/8 x 1 1/8 1 1/8 x 1 1/8	Connection Type ODF = solder (Only)	Configuration S/T = straight-thru (Only)

- + = R-12 and R-134a are interchangeable refrigerant charges
- * = R-507, R-502 and R-404A are interchangeable refrigerant charges
- = R-22 and R-407C are interchangeable refrigerant charges

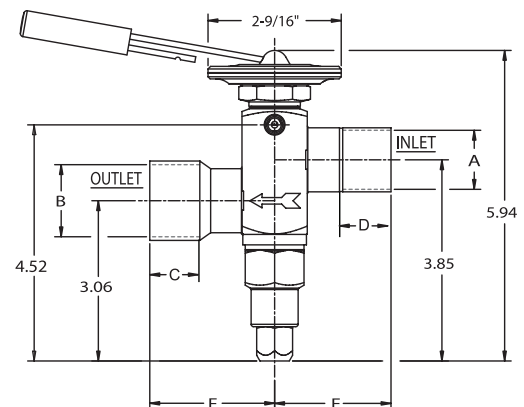
TRAE+ Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22/R-407C	R-507/R-404A/ R-502
7½ (27)	9 (32)	10 (35)	8 (28)
10 (35)	13 (46)	15 (53)	12 (42)
12 (42)	14 (50)	20 (71)	14 (50)
18 (64)	22 (78)	30 (106)	20 (71)
25 (88)	30 (106)	40 (142)	30 (106)

- All capacities shown are at 100°F condensing, 40°F evaporator temperature.
- *See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

TRAE+ Dimensional Data (in)

TRAE Valve Type	Nominal Inlet (B)	Sizes (ODF) Outlet (E)	Inlet		Inlet	
			A	C	D	F
TRAE+ 10-40 Tons	5/8	7/8	1.57	0.50	2.09	0.75
	5/8	1-1/8	1.57	0.50	2.21	0.91
	7/8	7/8	2.09	0.75	2.09	0.75
	7/8	1-3/8	2.09	0.75	2.21	0.91
	7/8	1-3/8	2.09	0.75	2.39	0.97
	1-1/8	1-1/8	2.21	0.91	2.21	0.97
	1-1/8	1-3/8	2.21	0.91	2.39	0.97



TRAE Series

The TRAE series is a large capacity valve for chiller, heat pump, refrigeration, and air conditioning applications.

Features

- Suitable for Bi-Flow applications
- External superheat adjustment
- Integral body with straight-thru connections
- Balanced port design improves valve operation and stability over wide loads and evaporator temperature range
- Solid copper connections
- Large diaphragm provides superior stability



Specifications

- Maximum Working Pressure: 450 psig
- UR/CUR file number: SA 5312

Nomenclature example: TRAE 50 HC 10 FT 7/8 x 1 1/8 ODF S/T

TRA	E	50	H	C	10 FT	7/8 x 1 1/8	ODF	S/T
Valve Series Hermetic Balanced Port Design	Equalizer E=External 1/4"SAE	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R-404A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length 10 FT (std)	Inlet x Outlet Connection Sizes 1/4 x 3/8 3/8 x 1/2	Connection Type ODF = solder (Only)	Configuration S/T = straight-thru (Only)

- + = R-12 and R-134a are interchangeable refrigerant charges
- * = R-507, R-502 and R-404A are interchangeable refrigerant charges
- = R-22 and R-407C are interchangeable refrigerant charges

TRAE Series – Nominal* Capacity Table in Tons (kW)

R-12	R-134a	R-22/R-407C	R-507/R-404A/R-502
30 (106)	40 (142)	50 (177)	35 (124)
35 (124)	45 (159)	60 (212)	40 (142)
40 (142)	50 (177)	70 (248)	50 (177)

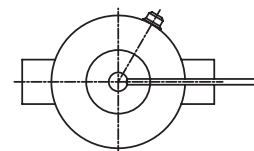
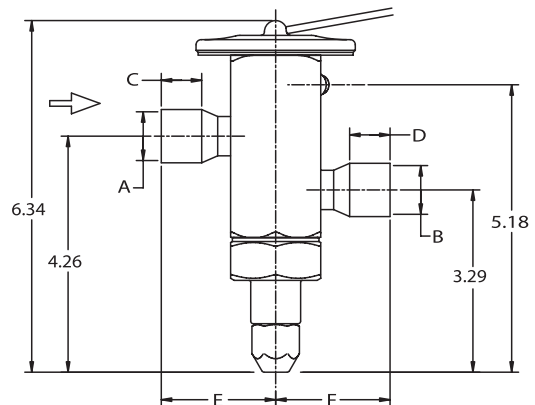
All capacities shown are at 100°F condensing, 40°F evaporator temperature.
*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

Dimensional Data (in) Remote Bulb Tubing Length 10' Standard

Connection Size		A	B	C MIN	D MIN	E	F
Inlet	Outlet						
7/8 ODF	7/8 ODF	0.88	0.88	0.75	0.75	2.09	2.09
7/8 ODF	1-1/8 ODF	0.88	1.13	0.75	0.91	2.90	2.21
7/8 ODF	1-3/8 ODF	0.88	1.38	0.75	0.97	2.90	2.39
1-1/8 ODF	1-1/8 ODF	1.13	1.13	0.91	0.91	2.21	2.21
1-1/8 ODF	1-3/8 ODF	1.13	1.38	0.91	0.97	2.21	2.39
1-3/8 ODF	1-3/8 ODF	1.38	1.38	0.91	0.97	2.39	2.39

Remote Bulb Table

Remote Bulb Tubing Length	Bulb Length
5, 10, 15 ft.	4-7/8
20, 30 ft.	
40, 50 ft.	6-3/16



TRAE/TRAE+ Series

Ordering Information

Refrigerant	Series	Tons*	Charge	Connections	Cap Tube	PCN	
R-22 R-407C R-404A R-134A	TRAE+	10	HC	5/8 X 7/8 ODF S/T	5 FT	062718	
			HCA	5/8 X 7/8 ODF S/T	10 FT	063138	
			HCA	7/8 X 1-1/8 ODF S/T	10 FT	063554	
			HC	7/8 X 1-1/8 ODF S/T	15 FT	063100	
		15	HC	7/8 X 1-1/8 ODF S/T	10 FT	062721	
			HCA	5/8 X 7/8 ODF S/T	10 FT	063510	
			HCA	7/8 X 1-1/8 ODF S/T	10 FT	062722	
			HCA	7/8 X 1-3/8 ODF S/T	10 FT	063141	
		20	HW100	5/8 X 7/8 ODF S/T	10 FT	063103	
			HC	7/8 X 1-3/8 ODF S/T	10 FT	063650	
			HCA	7/8 X 1-1/8 ODF S/T	10 FT	062725	
			HCA	1 1/8 X 1-1/8 ODF S/T	10 FT	064581	
		30	HW90	7/8 X 1-1/8 ODF S/T	15 FT	064018	
			HC	7/8 X 1-1/8 ODF S/T	10 FT	062724	
			SC	7/8 X 1-1/8 ODF S/T	10 FT	063461	
			SZ	5/8 X 7/8 ODF S/T	10 FT	064923	
		40	HC	7/8 X 1-1/8 ODF S/T	10 FT	062727	
			HC	1-1/8 X 1-3/8 ODF S/T	10 FT	062728	
			HCA	1-1/8 X 1-3/8 ODF S/T	10 FT	062730	
			HW100	7/8 X 1-3/8 ODF S/T	5 FT	063425	
		TRAE	35	MC	1-1/8 X 1-3/8 ODF S/T	10 FT	064001
				HC	1-1/8 X 1-3/8 ODF S/T	10 FT	062733
				HC	1-1/8 X 1-3/8 ODF S/T	15 FT	063153
				HCA	1-1/8 X 1-3/8 ODF S/T	10 FT	062734
	40	SC	1-1/8 X 1-3/8 ODF S/T	10 FT	064217		
		MC	1-1/8 X 1-3/8 ODF S/T	15 FT	063941		
		SC	1-1/8 X 1-3/8 ODF S/T	10 FT	064217		
		MC	1-1/8 X 1-3/8 ODF S/T	10 FT	063941		
	50	HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061700		
		HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061865		
		HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061865		
		HC	1-1/8 X 1-3/8 ODF S/T	10 FT	061866		

(+) Replaceable Power Assembly

Standard Product Offering

Cage Replacement Kits for TRAE+ Series Valves

Cage kits are cross referenced by capacity and tonnage in the table below. Each cage kit consists of a replacement cage and cage removal wrench. In addition, the cage removal wrench (KT-20294) can be ordered as a separate item.

PCN	TRAE+ KIT	Nominal Capacity - Tons		
		R-22	R-12/R-134a	R-507/R-404A/ R-502
063387	KT-20289 CAGE KIT	10	9	8
063388	KT-20290 CAGE KIT	15	13	12
063389	KT-20291 CAGE KIT	20	14	14
063390	KT-20292 CAGE KIT	30	22	20
063391	KT-20293 CAGE KIT	40	30	30
063392	KT-20294 CAGE WRENCH KIT	All tonnages		

Standard Product Offering

Replacement Parts

Description	Part Number	PCN
Power Assembly	X-28458 HCA-2	063414
	X-28458 MC	063593
	X-28458 SC	095439
	X-28458 HW100-2	063416
	X-28458 SW45-2	065298
Seal Nut	27676-1	058707

Standard Product Offering

T-Series – Take-Apart

The T-series Take-Apart valves, with adjustable superheat and replaceable, interchangeable components are ideal for original equipment and field replacements in air conditioning, heat pump, and refrigeration applications.

Features

- Take-Apart construction for easy field service
- External superheat adjustment
- Bi-Flow capability
- Stainless steel power assembly up to 18 tons

Options

- Interchangeable, replaceable cages
- Interchangeable body flanges
- Interchangeable power assemblies
- 1/4 to 100 tons capacity



Specifications

- Maximum working pressure: 450 psig
- Torque Bolts: 300 in. lb.

Nomenclature example: TCLEB 5 HC 5 FT 3/8 x 1/2 SAE ANG

TCL	E	B	5	H	C	5 FT	3/8 x 1/2	SAE	ANG
Valve Series Take-Apart Adjustable	Equalizer E=External (Omit for Internal)	Bleed Hole (optional) B=Bleed Hole (Omit for no bleed hole)	Capacity Nominal Rating in Tons (See Cage Assembly Interchangeability Tables)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R404A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length	Inlet x Outlet Connection Sizes Various sizes are available (valve is also available less flange)	Connection Type SAE=flare ODF=solder	Configuration ANG = 90° angle S/T=straight-thru

- + = R-12 and R-134a are interchangeable refrigerant charges
- * = R-507, R-502 and R-404A are interchangeable refrigerant charges
- = R-22 and R-407C are interchangeable refrigerant charges

Single Outlet “T” Series Body Flanges with Bleed Hole for Use with PSC Compressors

Valve Type			Bleed Hole Diameter ¹ for % Capacity Bypass											
R-12/R-134a	R-22/R-407C	R-507/R-502/R-404A	10%		15%		20%		25%		30%		40%	
			Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size	Dia. (In)	Drill Size
TCL1/4F	TCL1/2H	TCL1/2R	–	–	0.02	1/64	0.02	77	0.02	76	0.02	74	0.03	72
TCL1/2F	TCL1H	TCL1/2R	0.02	77	0.02	75	0.02	73	0.03	71	0.03	69	0.04	65
TCL1F	TCL2H	TCL1R	0.03	71	0.03	1/32	0.04	64	0.04	60	0.05	56	0.05	55
TCL2F	TCL3H	TCL2R	0.03	70	0.04	65	0.04	60	0.04	57	0.05	3/4	0.06	54
TCL3F	TCL5H	TCL3R	0.04	65	0.04	57	0.05	55	0.06	54	0.06	1/16	0.07	50
TCL4F	TCL7-1/2H	TCL4-1/2R	0.04	57	0.05	55	0.06	53	0.07	51	0.08	48	0.09	44
TCL6-1/2F	TCL10H	TCL7R	0.05	55	0.06	53	0.07	50	0.08	47	0.09	44	0.10	39
TCL7-1/2F	TCL12H	TCL8R	0.05	55	0.06	53	0.07	50	0.08	47	0.09	44	0.10	39

¹Bleed hole sizes shown above are based on a percent of full effective port area of the valve. This does not necessarily indicate the percent of valve capacity that will be bypassed. The hole sizes shown above should be used for reference only. Normal industry practice is to equalize systems 3 to 5 minutes.

T-Series – Take-Apart

Large Capacity 22 to 100 tons (R22 Nominal – Balanced Ported and Bi Flow)



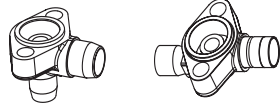
Externally Adjustable
Double Ported
Cage Assembly

Step 1: Select Cage from Capacity Table

Valve Type	Nominal Capacity - Tons						Cage Assembly ¹	
	R-12	R-134a	R-22	R-404A R-507	R-502	R-407C	Description	PCN
TER	13	16	22	14	14	22	X9117B6B	077896
	15	19	26	16	16	26	X9117B7B	078117
	20	25	35	21	21	35	X9117B8B	071155
	25	31	45	27	27	45	X9117B9B	029429
TIR	35	45	55	37	37	55	X9166B10B	070738
THR	35	45	55	37	37	55	X9144B10B	071238
	45	55	75	48	48	70	X9144B11B	020846
	55	68	85	60	60	85	X9144B13B	021067
TMR	55	68	100	60	--	100	X9144B14B	065123

¹ Gaskets included on cage.
Gasket strip X13455-1 (PCN: 027579) replaces all older T-Series Gasket kits.

Standard Product Offering



Step 2: Select Flange

Angle, ODF Straight-Thru, ODF

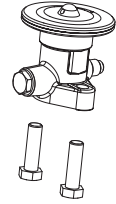
Valve Type	Style	Size & Style Connections		Body Flange Part	
		Inlet	Outlet	Number	PCN
TER ²	ANGLE	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9153	027919
	STRAIGHT- THRU	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9152	027918
TIR	ANGLE	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9151	027926
	STRAIGHT- THRU	7/8 ODF or 1-1/8 ODM	7/8 ODF or 1-1/8 ODM	9150	028849
THR	ANGLE	1-1/8 ODM	1-1/8 ODM	9149	028030
	STRAIGHT- THRU	1-1/8 ODM	1-1/8 ODM	9148	028032
TMR ²	ANGLE	1-1/8 ODM	1-1/8 ODM	9149-1	065124
	STRAIGHT- THRU	1-1/8 ODM	1-1/8 ODM	9148-1	065125

² TER-TMR Flange includes extended length capscrews.

Standard Product Offering

NOTE: Nominal capacities shown here are based on 40°F evaporator temperature and 100°F vapor-free liquid refrigerant entering the valve. R-12 and R-134a rated at 60 PSID. All other refrigerants rated at 100 PSID.

Superheat Plug
X28124-1 (ODM)
(PCN: 058336)



Step 3: Select Power Assembly

Capscrews

TER-TIR-THR-TMR Power Assemblies ³						
Refrigerant	Equalizer Type	Cap Tube Length	Application		Power Assembly	PCN
			Temp. Range	MOP ⁴ (psi)		
R-12	1/4 SAE	10 FT	-20 to +40	NONE	XC-726FC2B	052957
	1/4 SAE	10 FT	-50 to +50	55	XC-726FW552B	035000
R-22	1/4 SAE	10 FT	-20 to +50	NONE	XC-726HC2B	056421
	1/4 SAE	10 FT	-50 to +50	35	XC-726HW352B	024511
	1/4 SAE	10 FT	-50 to +30	65	XC-726HW652B	025011
	1/4 SAE	10FT	-20 to +50	NONE	XC-726HCA2B	059333
	1/4 SAE	10 FT	-50 to +50	100	XC-726HW1002B	036750
	1/4 SAE	10 FT	-50 to +10	NONE	XC-726HZ2B	040569
R-134A	1/4 SAE	10 FT	-20 to +50	NONE	XC-726MC2B	057235
	1/4 SAE	10 FT	-50 to +50	55	XC-726MW552B	057372
	1/4 SAE	10 FT	-50 to +10	NONE	XC-726MZ2B	063075
R-502	1/4 SAE	10 FT	-20 to +50	NONE	XC-726RC2B	052958
	1/4 SAE	10 FT	-50 to +20	15	XC-726RW152B	023351
	1/4 SAE	10 FT	-50 to +50	35	XC-726RW352B	070866
	1/4 SAE	10 FT	-50 to +25	65	XC-726RW652B	071421
	1/4 SAE	10 FT	-50 to +10	NONE	XC-726RZ2B	046692
R-404A	1/4 SAE	10 FT	-20 to +50	NONE	XC-726SC2B	062303
	1/4 SAE	10 FT	-50 to +10	40	XC-726SW402B	063127
	1/4 SAE	10 FT	-50 to +25	65	XC-726SW652B	061692
	1/4 SAE	10 FT	-50 to +10	NONE	XC-726SZ2B	063974

³ Capscrews included with Power Assembly

⁴ Maximum Operating Pressure Limit to prevent motor overload

Standard Product Offering

Additional Parts

Description	PCN
Packing Nut Wrench	039862
Gasket Strip	027579
Superheat Adjustment Plug	058336

Standard Product Offering

T-Series – Take-Apart

Ordering Information Valves less flange – (VLF)

TCLE, TJLE & TJRE SAE External 5 FT. Cap Tube Length

Valve Description					
R-12	PCN	R-22	PCN	R-502	PCN
TCLE 1/2 FC	054413	TCLE 1 HC	062884	TCLE 2 RC	061215
TCLE 1 FC	052940	TCLE 2 HC	061724	TCLE 3 RC	055501
TCLE 2 FC	052941	TCLE 3 HC	054395	TCLE 8 RC	063501
TCLE 3 FC	052942	TCLE 5 HC	054399		
TCLE 4 FC	052943	TCLE 7-1/2 HC	054401		
TCLE 6-1/2 FC	052944	TCLE 7-1/2 HW100	054079		
TCLE 7-1/2 FC	052945	TCLE 10 HC	054404		
TJLE 8 FC	055104	TCLE 10 HW100	059076		
TJRE 11 FC	055105	TCLE 12 HC	060854		
		TJLE 11 HC	060855		
		TJLE 14 HC	060856		
		TJRE 14 HC	060857		
		TJRE 18 HC	060858		

Standard Product Offering

TER, TIR & THR 10 FT. Cap Tube Length

Valve Description					
R-12	PCN	R-22	PCN	R-502	PCN
TER 20 FC	055109	TER 22 HC	061673	TER 14 RC	060788
TER 25 FC	055111	TER 22 HW100	058582		
		TER 26 HC	061674		
		TER 35 HC	061675		
		TER 35 HW100	058038		
		TER 45 HC	061676		
		TIR 55 HC	061677		
		THR 75 HC	064961		
		THR 100 HC	062036		
		THR 100 HW100	052912		

Standard Product Offering

Replacement Cap Screw Kits

PCN	Description	Contains Screw #	Pcs. Per Pkg.
054569	KT-30021	PS-286-5	10
054570	KT-30022	PS-168-5	10
054571	KT-30023	PS-259	10
054572	KT-30024	PS-370	10
054573	KT-30025	PS-514-5	10
054574	KT-30026	PS-517-5	10

TCLE/TJLE/TJRE Rapid Response Power Assemblies

Description	PCN
X-8019 FWS 1B	031654
X-8019 HWS 1B	055652
X-8019 HWS 2B	055873
X-8019 RWS 1A	032131
X-8019 RWS 2B	042426

Nomenclature Cross-Reference

Refrigerant	New	Old
R-12	TJLE7	TJLE800
	TJLE8	TJLE1100
R-22	TJLE11	TJLE1400
	TJLE14	TJLE1800
R-502	TJLE7	TJLE900
	TJLE9	TJLE1200

TER/TIR/THR Rapid Response Power Assemblies

Description	PCN
X-7726 FWS 2B	035083
X-7726 HWS 2B	093565
X-7726 RWS 2B	036616

Standard Product Offering

TLE Series

The TLE series is designed for air conditioning, heat pumps, transportation and commercial refrigeration. Take-Apart construction improves serviceability with replaceable/interchangeable parts. TLE valves do not have an external superheat adjustment.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Non-adjustable superheat to maintain factory setting
- Bi-Flow capability for heat pump applications (external equalizer required)
- Take-Apart construction for easy field service

Options

- Interchangeable capacity cages, power assemblies and flanges

Specifications

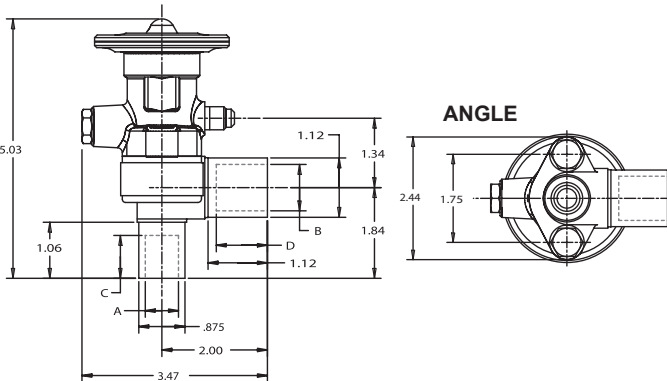
- Maximum working pressure: 450 psig
- Capscrew Torque: 300 in. lbs.



Nomenclature example: TLEB 5 HCA 5 FT 3/8 x 1/2 ODF S/T

TL	E	B	5	H	C	5 FT	3/8 x 1/2	ODF	S/T
Valve Series* Take-Apart	Equalizer E=External 1/4" SAE Standard 1/4" ODF Available (Omit for Internal)	Bleed Hole (optional) B=Bleed Hole (Omit for no bleed hole)	Capacity Nominal Rating in Tons (See Cage Capacity Table)	Refrigerant Code +F = R-12 • H = R-22 +M = R-134a • N = R-407C *P = R-507 *R = R-502 *S = R-404A	Charge Code C = medium temp CA = heat pump W(MOP) = press. limiting Z = low temp	Capillary Tube Length 5 FT (std)	Inlet x Outlet Connection Sizes Various sizes are available (valve is available also less flange)	Connection Type SAE=flare ODF=solder	Configuration ANG = 90° angle S/T = straight-thru

- + = R-12 and R-134a are interchangeable refrigerant charges
- * = R-507, R-502 and R-404A are interchangeable refrigerant charges
- = R-22 and R-407C are interchangeable refrigerant charges



Dimensional Data (in)

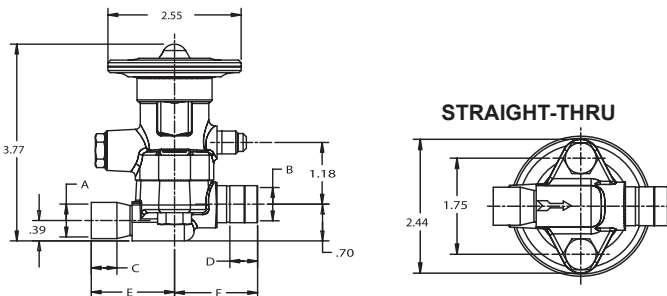
TLE Angle

Connection Size		A	B	C MIN	D MIN
Inlet	Outlet				
ODF:ODM 5/8:7/8	ODF:ODM 7/8:1-1/8	0.63	0.88	0.81	1.00

TLE Straight Thru

Connection Size		A	B	C MIN	D MIN	E	F
Inlet	Outlet						
5/8 ODF	1-1/8 ODF	0.63	1.13	0.53	0.91	1.63	2.50
7/8 ODF	1-1/8 ODF	0.88	1.13	0.75	0.91	1.94	2.50
7/8 ODF	1-3/8 ODF	0.88	1.38	0.75	0.97	1.94	2.69

Allow 2-1/8" above valve for removal of power assembly.



TLE Series

Ordering Information

Valve Less Flange (VLF)

Valve Less Flange ¹	PCN	Equalizer Type	Refrigerant
TLE 1/2 HW	--	1/4 SAE External	R-22
TLE 1 HW	--		
TLE 2 HW	--		
TLE 3 HW	041734		
TLE 5 HW	054793		
TLE 7-1/2 HW	054794		
TLE 10 HW	055125		
TLE 12 HW	054795		

¹Also available with "HCA" charge for heat pump and air conditioning applications.

Standard Product Offering

Cage Capacities in Tons

PCN	Description	R-12	R-134A	R-22/R-407C	R-404/R-507/ R-502
041551	X-22517 B1B	1/4	1/4	1/2	1/4
041556	X-22517 B3B	1	1-1/2	2	1
041560	X-22517 B4A	2	2-1/2	3	2
041558	X-22517 B4B	2	2-1/2	3	2
041562	X-22517 B5B	3	3-1/2	5	3
041564	X-22517 B6B	4	5-1/2	7-1/2	4-1/2
041566	X-22517 B7B	6-1/2	7-1/2	10	7

Standard Product Offering

Flanges

PCN	Description	Connections
027770	9761-2	1/2 X 7/8 ODF S/T
027771	9761-3	3/8 X 5/8 ODF S/T
027268	9761-4	1/2 X 5/8 ODF S/T
027769	9761-5	3/8 X 1/2 ODF S/T
027766	9761-6	1/2 X 1/2 ODF S/T
027764	A-576	5/8 X 7/8 ODF ANG
056932	C-500-4	3/8 X 1/2 SAE ANG
057153	C-500-5	3/8 X 5/8 SAE ANG
056294	C-500-6	1/2 X 5/8 SAE ANG
065527	C-501-4	3/8 X 1/2 ODF ANG
065748	C-504-5	3/8 X 5/8 ODF ANG
065861	C-504-7	1/2 X 5/8 ODF ANG
044733	X-6346-16	5/8 X 5/8 ODF S/T
044846	X-6346-17	5/8 X 7/8 ODF S/T
094038	X-6346-18	5/8 X 1-1/8 ODF S/T
071757	X-6346-34	7/8 X 1-1/8 ODF S/T
050563	X-6669-1	3/8 X 5/8 SAE S/T
050842	X-6669-2	1/2 X 5/8 SAE S/T
051176	X-6669-4	3/8 X 1/2 SAE S/T
083378	X-6669-5	1/2 X 1/2 SAE S/T

Standard Product Offering

Replacement Power Assemblies

PCN	Description
083765	XB1033 FW25-1B
061760	XB1033 HW-1B
077201	XB1033 HW-15A
089748	XB1033 HW-75B
095534	XB1033 HW100-15B
095813	XB1033 HW100-1B

Standard Product Offering

Power Assembly Nomenclature

Description
XB-1033 XXX-YZ
xxx = charge code y = cap tube length code z = internal (A) or external (B) equalizer

TFE Series R-22

The TFE R-22 series is designed for large tonnage heat pump, air conditioning, and commercial refrigeration applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Replaceable power element
- External superheat adjustment
- ODF connections
- Balanced port construction compensates for changes in operating pressures due to varying ambients, or widely varying evaporator loads
- Bi-directional control capability
- External equalizer



Specifications

- Maximum working pressure: 450 psig

TFE Nominal* Capacity Table in Tons

R-134a	R-22/R-407C	R-502, R-404a/R-507
6	8	5
8	10	7
10	12	9
15	20	14

*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750

Nomenclature example: TFES 10 HCA 5/8 x 7/8 ODF S/T

TF	E	S	10	H	CA	5/8 x 7/8	ODF	S/T
Valve Series Balanced Port, Replaceable Power Assembly	Equalizer E=External 1/2" ODF	Connection Type S = solder (Only)	Capacity Nominal Rating in Tons (See nominal capacity table below)	Refrigerant Code • H = R-22 • M = R-134a • N = R-407C • P = R-507 • R = R-502 • S = R-404A	Charge Code C = medium temp CA = heat pump	Inlet x Outlet Connection Sizes (See ordering information table below)	Connection Type ODF=solder	Configuration S/T = Straight- thru

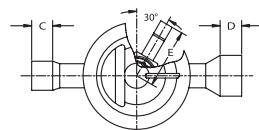
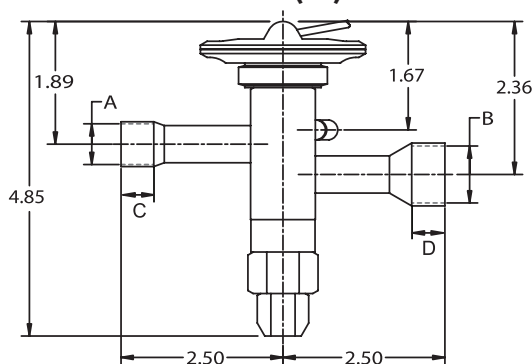
* = R-507, R-502 and R-404A are interchangeable refrigerant charges, • = R-22 and R-407C are interchangeable refrigerant charges

Ordering Information

Valve Series	Capacity Tons* (R-22 Nominal)	Connections	PCN HCA Charge (R-22 Heat Pump)
	8	5/8 X 7/8 ODF S/T 6A ODF EE	061608
	10	5/8 X 7/8 ODF S/T 6A ODF EE	061610
	12	5/8 X 7/8 ODF S/T 6A	061609
	20	5/8 X 7/8 ODF S/T 6A	064493

Standard Product Offering

Dimensional Data (in)



Inlet/Outlet Fittings Dimensional Data (in)

Connections	Inlet		Outlet		Equalizer				
	Inlet	Outlet	A	B	C MIN.	D MIN.	1/4 ODF	SAE	
1/4 ODF		3/8 ODF	0.25	0.38	0.31	0.31	1.70	1.65	
		1/2 ODF	0.25	0.50					0.37
		5/8 ODF	0.25	0.63					0.50
3/8 ODF		3/8 ODF	0.38	0.38	0.31	0.31	1.70	1.65	
		1/2 ODF	0.38	0.50					0.37
		5/8 ODF	0.38	0.63					0.50
		7/8 ODF	0.38	0.88					0.76
1/2 ODF		1/2 ODF	0.50	0.50	0.37	0.37	1.70	1.65	
		5/8 ODF	0.50	0.63					0.37
		7/8 ODF	0.50	0.88					0.37
5/8 ODF		5/8 ODF	0.63	0.63	0.50	0.50	1.70	1.65	
		7/8 ODF	0.63	0.88					0.50
		1-1/8 ODF	0.63	1.13					0.50
7/8 ODF		7/8 ODF	0.88	0.88	0.76	0.76	1.70	1.65	
		1-1/8 ODF	0.88	1.13					0.76

Replacement Parts

Description	P/N	PCN
Power Assembly	X-28458 HC-2	036413
	X-28458 HCA-2	063414
	X-28458 HW100-2	063416
	X-28458 MC-3	063593
	X-28458 MW45-3	063594
	X-28458 SC-2	065439
	X-28458 SW45-2	065298
Seal Nut	27676-1	058707

Standard Product Offering

TFE Series R-410A

The TFE R-410A series is designed for large tonnage heat pump, air conditioning, and commercial refrigeration applications.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Replaceable power element
- External superheat adjustment
- ODF connections
- Balanced port construction compensates for changes in operating pressures due to varying ambients, or widely varying evaporator loads
- Bi-directional control capability
- External equalizer
- ZAA charge for R-410A systems



Specifications

- Maximum working pressure: 630 psig

TFE Nominal* Capacity Table in Tons

Model	Typical System Application
TFE 12	10-13 Tons
TFE 16	14-17 Tons
TFE 20	18-20 Tons

*See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750

Nomenclature example: TFES 16 ZAA 5/8 x 7/8 ODF S/T

TF	E	S	16	Z	AA	5/8 x 7/8	ODF	S/T
Valve Series Balanced Port, Replaceable Power Assembly	Equalizer E=External 1/4" ODF	Connection Type S = solder	Capacity Nominal Rating in Tons	Refrigerant Code Z = R-410A	Charge Code AA = wide range	Inlet x Outlet Connection Sizes (See ordering information table below)	Connection Type ODF=solder	Configuration S/T = Straight-thru

Ordering Information

Refrigerant	Tons	Bleed	Inlet x Outlet	Sensing Bulb Capillary Tube Length	PCN
R-410A	12	-	5/8 ODF x 7/8 ODF	5 ft.	066146
		15%	5/8 ODF x 7/8 ODF	5 ft.	066147
		-	7/8 ODF x 1-1/8 ODF	10 ft.	066148
	16	-	5/8 ODF x 7/8 ODF	5 ft.	066149
		15%	5/8 ODF x 7/8 ODF	5 ft.	066150
		-	7/8 ODF x 1-1/8 ODF	10 ft.	066151
	20	-	5/8 ODF x 7/8 ODF	5 ft.	066152
		15%	5/8 ODF x 7/8 ODF	5 ft.	066153
		-	7/8 ODF x 1-1/8 ODF	10 ft.	066154
		-	7/8 ODF x 1-1/8 ODF	10 ft.	066154

Standard Product Offering

Inlet/Outlet Fittings Dimensional Data (in)

Connections		Inlet		Outlet	
Inlet	Outlet	A	B MIN	C	D MIN.
1/2 ODF	1/2ODF	0.50	0.37	0.50	0.37
	5/8 ODF	0.50	0.37	0.63	0.50
	7/8ODF	0.50	0.37	0.88	0.76
5/8 ODF	5/8 ODF	0.63	0.50	0.63	0.50
	7/8ODF	0.63	0.50	0.88	0.76
	1-1/8 ODF	0.63	0.50	1.13	0.91
7/8 ODF	7/8ODF	0.88	0.76	0.88	0.76
	1-1/8 ODF	0.88	0.76	1.13	0.91

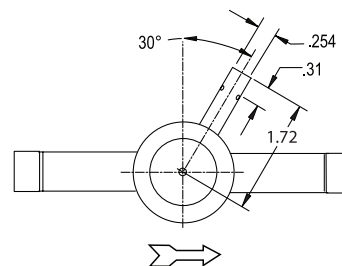
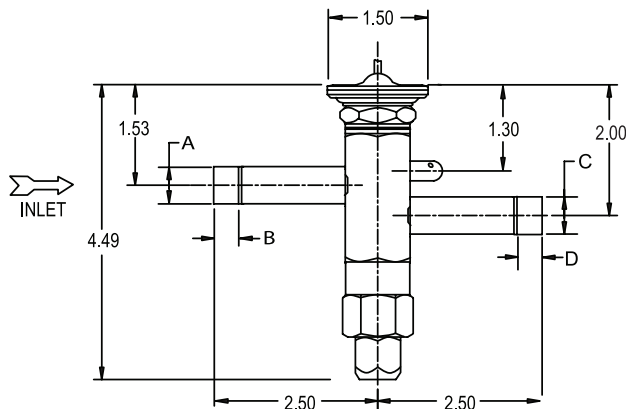
Replacement Parts

Description	P/N	PCN
R-410A Power Assembly*	KT-30032 (X-30669 ZAA-2)	066155*
Seal Nut	27676-1	058707

*Approved for use only on TEF Series R-410A valves (with ZAA charge)

Standard Product Offering

Dimensional Data (in)



TI Series – w/Interchangeable Cartridges

The TI series has interchangeable cages capable of changing valve capacity in the field.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Wrench flats on inlet and outlet
- Forged brass valve body
- Inlet strainer assembly



Options

- Interchangeable capacity cages

Specifications

- Inlet connection size: 3/8" SAE, Outlet 1/2" SAE
- Maximum working pressure: 652 psig
- Maximum bulb temperature: 165°F

Nomenclature example: TIE4 HW

TI	E	4	H	W
Valve Series	Equalizer E=External (Omit for internal)	Orifice Size Valves sold less cage (Select proper cage from interchangeability table below)	Refrigerant Code • H = R-22 M = R-134a • N = R-407C *P = R-507 *S = R-404A	Charge Code W = medium temp W(MOP) = press. limiting

- * = R-507 and R-404a are interchangeable refrigerant charges
- = = R-22 and R-407C are interchangeable refrigerant charges

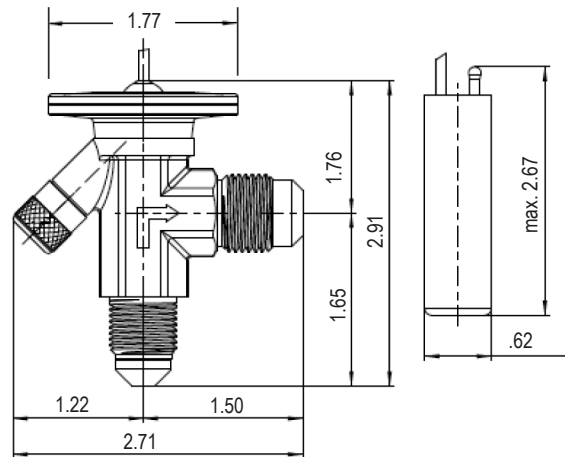
Interchangeable Cages

Cage Size	Type	PCN	Nominal Capacity (kW)		
			R-134a	R-22/R-407C	R-404A/R-507
00	TIO-00X	065087	0.03	0.05	0.04
0	TIO-000	065088	0.08	1.30	1.00
1	TIO-001	065090	1.90	3.20	2.30
2	TIO-002	065091	3.10	5.30	3.90
3	TIO-003	065092	5.00	8.50	6.20
4	TIO-004	065093	8.30	13.90	10.10
5	TIO-005	065094	10.10	16.90	12.30
6	TIO-006	065095	11.70	19.50	14.20

NOTE: Nominal capacities shown on pages at the end of this section are based on European standards of +38°C condensing temperature, +4°C evaporating temperature and 1°K liquid subcooling at the inlet of the expansion valve. This methodology varies from the rest of the capacity tables in this catalog.

Standard Product Offering

Dimensional Data (in)



TI(E) Series – Valve bodies, Flare type

Evaporating Temp Range °F	Equalizer Type	Refrigerant					
		R-134a		R-22/R-407C		R-404A/R-507	
		Valve	PCN	Valve	PCN	Valve	PCN
-10 to +40	internal	TI-MW	066387	TI-HW	066389	TI-SW	066391
	external	TIE-MW	066388	TIE-HW	066390	TIE-SW	066392

Standard Product Offering

ZZ Series – for Ultra Low Temps

The ZZ series is designed for ultra low temperature applications such as environmental test chambers and other applications where the desired evaporator temperature is below -40°F.

Features

- Take-Apart construction for easy field service
- Improved internal construction extends valve life
- External equalizer standard
- Exclusive cage bellows eliminates friction at low temperatures
- External superheat adjustment

Options

- Interchangeable cages, power assemblies, and flanges for maximum flexibility



Specifications

Maximum working pressure: 450 psig

Nomenclature example: ZC 6 B G125 10 FT 3/8 x 5/8 ODF ANG

ZC	6	B	G125	10 FT	3/8 x 5/8	ODF	ANG
Valve Series Ultra Low Temperature Take-Apart	Capacity (nominal @ -40°F) Tons	Refrigerant Code B = R-13/R-23 H = R-22 R = R-502	Charge Code Z = low temp G(MOP) = press.limiting	Capillary Tube Length 10 FT (std)	Inlet x Outlet Connection Sizes	Connection Type SAE = flare ODF=solder	Configuration ANG = 90° angle S/T = straight-thru

R-13/R-23 Valve Type	R-22 Valve Type	Standard Connections
ZC 1BG	ZC 3/4HZ	3/8 ODF x 5/8 ODF
ZC 2-1/2BG	ZC 1-1/2HZ	
ZC 4BG	ZC 2-1/2HZ	
ZC 6BG	ZC 4HZ	1/2 ODF x 5/8 ODF
ZC 9BG	ZC 6HZ	
ZC 13BG	ZC 8HZ	
ZZ ER 20BG	--	7/8 ODF x 1-1/8 ODM

NOTE: Nominal capacities shown here are based upon the following conditions:

Refrigerant	Evaporator Temperature	Liquid Temperature at Valve Inlet	Pressure Drop Across Valve
R-23	-40°F	0°F	150 psig
R-22	-40°F	20°F	150 psig

ZZ Series – for Ultra Low Temps

Ordering Information

Cage Assemblies & Gaskets

Valve	Description	PCN
ZZC1BG, ZZC3/4RHW, ZZC3/4RW	X10110-B1B	021288
ZZC2-1/2BG, ZZC1-1/2HW, ZZC1-1/2RW	X10110-B2B	020871
ZZC4BG, ZZC2-1/2HW, ZZC2-1/2RW	X10110-B3B	096091
ZZC6BG, ZZC4HW, ZZC3-1/2RW	X10110-B4B	096312
ZZC9BG, ZZC6HW, ZZC5RW	X10110-B5B	096425
ZZC13BG, ZZC8HW, ZZC8RW	X10110-B6B	096646
ZZER6BG, ZZER4HW, ZZC3-1/2RW	X10059-B4B	045362
ZZER9BG, ZZER6HW, ZZER5RW	X10059-B5B	033697
ZZER20BG, ZZER12HW, ZZER11RW	X10059-B6B	030071
ZZER21BG, ZZER13HW, ZZER13RW	X10059-B7B	025100
ZZER29BG, ZZER18HW, ZZER18RW	X10059-B8B	025101
ZZIR48BG, ZZIR30HW, ZZIR29RW	X10060-B10B	025090
ZZJR16BG, ZZJR10HW, ZZJR9RW	X10111-B5B	089306

Standard Product Offering

Power Assemblies

PCN	Description
094594	XC-726 BG 30-2B 10FT. SAE EE
039130	XC-726 BG 125-2B 10 FT. SAE EE
024511	XC-726 HW 35-2B 10 FT. SAE EE
025011	XC-726 HW 65-2B 10 FT. SAE EE
023357	XC-726 HW 85-3B 15 FT. SAE EE
036750	XC-726 HW 100-2B 10FT. SAE EE
040569	XC-726 HZ-2B 10FT. SAE EE

Replacement Power Assembly consists of: power assembly, and bulb clamps

Standard Product Offering

Replacement Gasket Set

PCN	Description
027579	X-13455-1

Gasket Set includes necessary body flange gasket & seat gasket

Standard Product Offering

Flanges

PCN	Description	Connections
027770	9761-2	1/2 X 7/8 ODF S/T
027771	9761-3	3/8 X 5/8 ODF S/T
027268	9761-4	1/2 X 5/8 ODF S/T
027769	9761-5	3/8 X 1/2 ODF S/T
027766	9761-6	1/2 X 1/2 ODF S/T
027764	A-576	5/8 X 7/8 ODF ANG
056932	C-500-4	3/8 X 1/2 SAE ANG
057153	C-500-5	3/8 X 5/8 SAE ANG
056294	C-500-6	1/2 X 5/8 SAE ANG
065527	C-501-4	3/8 X 1/2 ODF ANG
065748	C-501-5	3/8 X 5/8 ODF ANG
065861	C-501-7	1/2 X 5/8 ODF ANG
044733	X-6346-16	5/8 X 5/8 ODF S/T
044846	X-6346-17	5/8 X 7/8 ODF S/T
094038	X-6346-18	5/8 X 1-1/8 ODF S/T
071757	X-6346-34	7/8 X 1-1/8 ODF S/T
050563	X-6669-1	3/8 X 5/8 SAE S/T
050842	X-6669-2	1/2 X 5/8 SAE S/T
051176	X-6669-4	3/8 X 1/2 SAE S/T
083378	X-6669-5	1/2 X 1/2 SAE S/T

Standard Product Offering

LCL Take-Apart – DeSuperheating

The LCL Take-Apart series is a desuperheating (Liquid Injection) valve used in conjunction with hot gas bypass to prevent excessive suction line superheat. LCL valves can be used for interstage cooling in compound systems.

Features

- Stainless steel power element eliminates corrosion and prevents valve failure
- Take-Apart construction for easy field service

Options

- Interchangeable, replaceable cages for versatility
- External superheat adjustment
- Interchangeable body flanges
- Interchangeable power assemblies



Specifications

- Maximum working pressure: 450 psig

Nomenclature

example: LCLE 2 B 5 FT 3/8 x 1/2 ODF S/T

LCL	E	2	B	5 FT	3/8 x 1/2	ODF	S/T
Valve Series De-Superheating Liquid Injection Take-Apart	Equalizer E=External (Omit for Internal)	Capacity Nominal NOTE: This is not system capacity (Contact Application Engineering for sizing)	Refrigerant Code	Capillary Tube Length 5 FT (std)	Inlet x Outlet Connection Sizes (see table below)	Connection Type SAE = flare ODF=solder	Configuration ANG = 90° angle S/T = straight-thru

Ordering Information

Description	Equalizer Type	PCN By Charge			Connections
		Select From Table Below			
		A	B	C	
LCL 1	Internal	022018	022017	--	Same as TCL & TCLE
LCL 2		022005	021996	045527	
LCL 3		055093	021987	--	
LCL 6		047759	--	--	
LCLE 1	1/4"SAE External	055096	--	--	
LCLE 2		022003	021997	--	
LCLE 3		021991	021985	--	
LCLE 4		--	061054	055097	

NOTE: Add charge suffix symbol "A", "B", or "C" based on the following table.

Example: LCLE4-A

Standard Product Offering

Replacement Valve Guide

If have:	Replace with:
LA(E)S 1/2	LCL 1
LA(E)S 1	LCL 2
LA(E)S 2	LCL 3
LA(E)S 3	LCL 4
LA(E)S 5	LCL 6
LCL 5	LCL 6
LCLE 5	LCLE 6
LCL 8	LCL 9
LCLE 8	LCLE 9

Note: Valve sizes LCL5, LCL8, LCLE5 and LCLE8 are OBSOLETE.

LCL (LA) Charge Codes

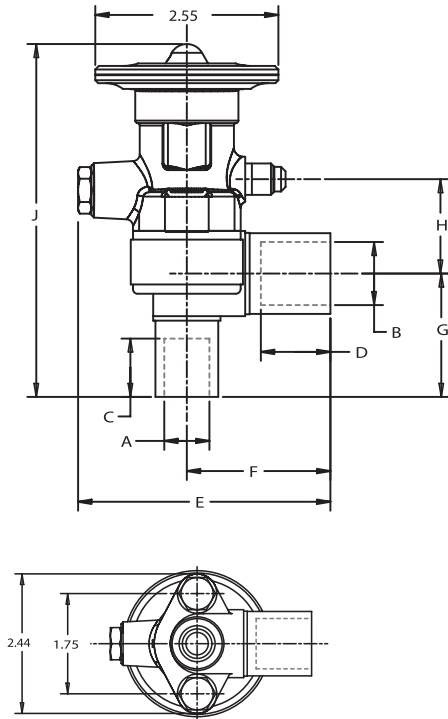
Saturated Suction	Refrigerant					
	R-134A		R-22		R-404A/R-507	
	Required Suction Gas		Required Suction Gas		Required Suction Gas	
TEMP.	45°F	65°F	45°F	65°F	45°F	65°F
40°F	--	B (GL)	--	A (CL)	--	--
30°F	B (GL)	B (GL)	--	A (CL)	--	A (CL)
20°F	B (GL)	C (UL)	A (CL)	B (GL)	--	A (CL)
10°F	B (GL)	C (UL)	B (GL)	B (GL)	A (CL)	B (GL)
0°F	C (UL)	C (UL)	B (GL)	B (GL)	A (CL)	B (GL)
-10°F	C (UL)	C (UL)	B (GL)	C (UL)	B (GL)	B (GL)
-20°F	C (UL)	C (UL)	B (GL)	C (UL)	B (GL)	C (UL)
-30°F	C (UL)	C (UL)	C (UL)	C (UL)	B (GL)	C (UL)
-40°F	C (UL)	C (UL)	C (UL)	C (UL)	B (GL)	C (UL)

() Denotes LA Series valve charge code.

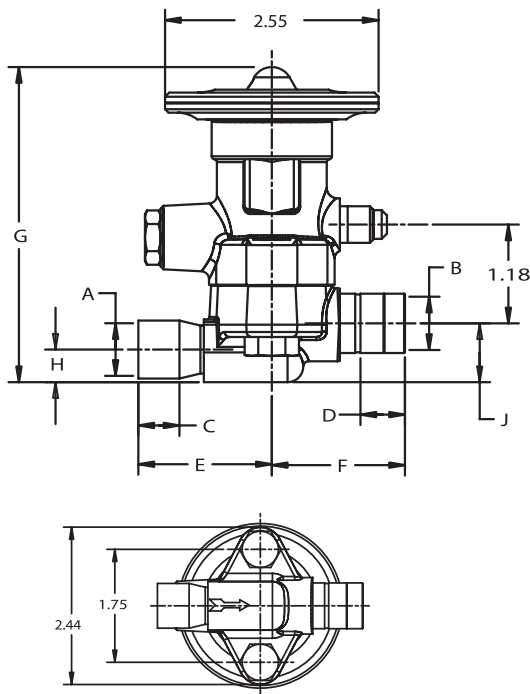
LCL Take-Apart – DeSuperheating

Dimensional Data

Angle



Straight-Thru



LCL(E) Dimensional Data (in)

LCL Angle

Connection Size		A	B	C	D	E	F	G	H	J
Inlet	Outlet			MIN.	MIN.					
3/8 SAE	1/2 SAE					3.06	1.50	1.13	1.20	4.14
3/8 SAE	5/8 SAE					3.19	1.63	1.13	1.20	4.14
1/2 SAE	5/8 SAE					3.19	1.63	1.38	1.20	4.39
1/4 ODF	3/8 ODF	0.25	0.38	0.31	0.31	2.91	1.34	0.94	1.20	3.95
3/8 ODF	1/2 ODF	0.38	0.50	0.31	0.38	3.03	1.47	1.06	1.20	4.11
3/8 ODF	5/8 ODF	0.38	0.63	0.31	0.50	3.16	1.59	1.06	1.20	4.11
1/2 ODF	5/8 ODF	0.50	0.63	0.38	0.50	3.16	1.59	1.90	1.20	4.20
5/8 ODF	7/8 ODF	0.63	0.88	0.50	0.75	3.56	2.00	1.69	1.20	4.83

LCL Straight Thru

3/8 SAE	1/2 SAE					1.78	1.98	3.70	0.38	0.69
3/8 SAE	5/8 SAE					1.78	2.16	3.70	0.38	0.69
1/2 SAE	1/2 SAE					1.97	1.56	3.70	0.38	0.69
3/8 ODF	1/2 ODF	0.38	0.50	0.31	0.38	1.41	1.58	3.69	0.38	0.69
3/8 ODF	5/8 ODF	0.38	0.63	0.31	0.50	1.41	1.63	3.69	0.36	0.67
1/2 ODF	1/2 ODF	0.50	0.50	0.38	0.38	1.41	1.56	3.70	0.38	0.69
1/2 ODF	5/8 ODF	0.50	0.63	0.38	0.50	1.59	1.63	3.69	0.36	0.67
5/8 ODF	5/8 ODF	0.63	0.63	0.50	0.50	1.59	1.63	3.70	0.38	0.69
5/8 ODF	7/8 ODF	0.63	0.88	0.50	0.75	1.59	1.94	3.70	0.38	0.69
5/8 ODF	1-1/8 ODF	0.88	1.13	0.50	0.91	1.59	2.38	3.70	0.38	0.69
7/8 ODF	1-1/8 ODF	0.88	1.13	0.75	0.91	1.94	2.38	3.81	0.38	0.69

Allow 2-1/8" above valve for removal of power assembly.

Remote Bulb Dimensions

Capillary Tubing Length (Ft)	Standard Remote Bulb	
	Diameter	Length
5	5/8	3-1/16
10		3-9/16
15 or 20		4-13/16

ACP(E) – Automatic

The ACP is designed for small cooling units where the heat load is reasonably constant. The ACP is ideal for room air conditioners, domestic refrigerators, drink dispensers, food dispensers, ice cream cabinets, bottle coolers, home freezers, ice cube makers, ice cream freezers, and milk coolers.

Features

- Friction-free floating design
- Can be used as a small capacity hot gas bypass valve
- Fully adjustable from 0-80 psig (factory setting 40 psig)
- Wrench flats on inlets and outlets

Options

- Internal or external equalizer
- SAE or ODF connections



Specifications

- Maximum working pressure: 500 psig
- Maximum working temperature: 300°F
- UL/CUL file number: SA5312

Nomenclature example: ACPE 6 SAE EE 1/4 x 3/8 ODF ANG

ACP	E	6	SAE EE	1/4 x 3/8	ODF	ANG
Valve Series	Equalizer E=External (optional)	Port Size (diameter) see table below	External Equalizer Type	Inlet x Outlet Connection Sizes	Connection Type ODF or SAE	Body Style ANG = Angle S/T = Straight-thru

Ordering Information

PCN	Description	PCN	Description
046838	ACP 1 IE 1/4 x 3/8-1/2 SAE ANG	049204	ACP 5 IE 3/8 X 3/8-1/2 SAE ANG
047652	ACP 6 IE 1/4 x 3/8 ODF ANG	047653	ACP 6 IE 1/4 x 3/8 SAE ANG
047680	ACP 1 IE 1/4 x 3/8 ODF ANG	057233	ACP 1 IE 1/4 x 3/8 ODF S/T
056240	ACP 1 IE 1/4 X 3/8 SAE ANG	065922	ACP 6 IE 3/8 x 3/8 ODF ANG
046839	ACP 2 IE 1/4 X 3/8 SAE ANG	047654	ACP 7 IE 3/8 x 1/2 ODF ANG
047651	ACP 2 IE 1/4 x 3/8 ODF ANG	047285	ACP 7 IE 3/8 x 3/8-1/2 SAE ANG
047283	ACP 3 IE 1/4 X 3/8 ODF ANG	047655	ACP 8 IE 3/8 x 1/2 ODF ANG
046840	ACP 3 IE 1/4 x 3/8 SAE ANG	047657	ACP 9 IE 3/8 X 1/2 ODF ANG
047105	ACP 4 IE 1/4 x 3/8 ODF ANG	057209	ACP 9 IE 3/8 X 3/8 ODF ANG
047101	ACP 4 IE 1/4 X 3/8 SAE ANG	057771	ACP 9 IE 1/2 x 5/8 ODF ANG
047284	ACP 5 IE 1/4 x 3/8 ODF ANG	052773	ACP 9 IE 1/4 X 3/8 ODF ANG
047332	ACP 5 IE 1/4 X 3/8 SAE ANG	047658	ACP 9 IE 3/8 x 3/8-1/2 SAE ANG
053374	ACP 5 IE 3/8 x 3/8 ODF ANG	057327	ACP 9 IE 3/8 X 3/8 SAE S/T
		047280	ACPE 1 SAE EE 1/4 x 3/8 SAE S/T
		053231	ACPE 1 SAE EE 1/4 x 3/8 ODF ANG
		047790	ACPE 7 SAE EE 3/8 x 1/2 ODF ANG
		048657	ACPE 9 SAE EE 3/8 x 1/2 ODF S/T
		058674	ACPE 9 SAE EE 1/2 x 5/8 ODF S/T
		057017	ACPE 9 ODF EE 3/8 x 1/2 ODF ANG

Standard Product Offering

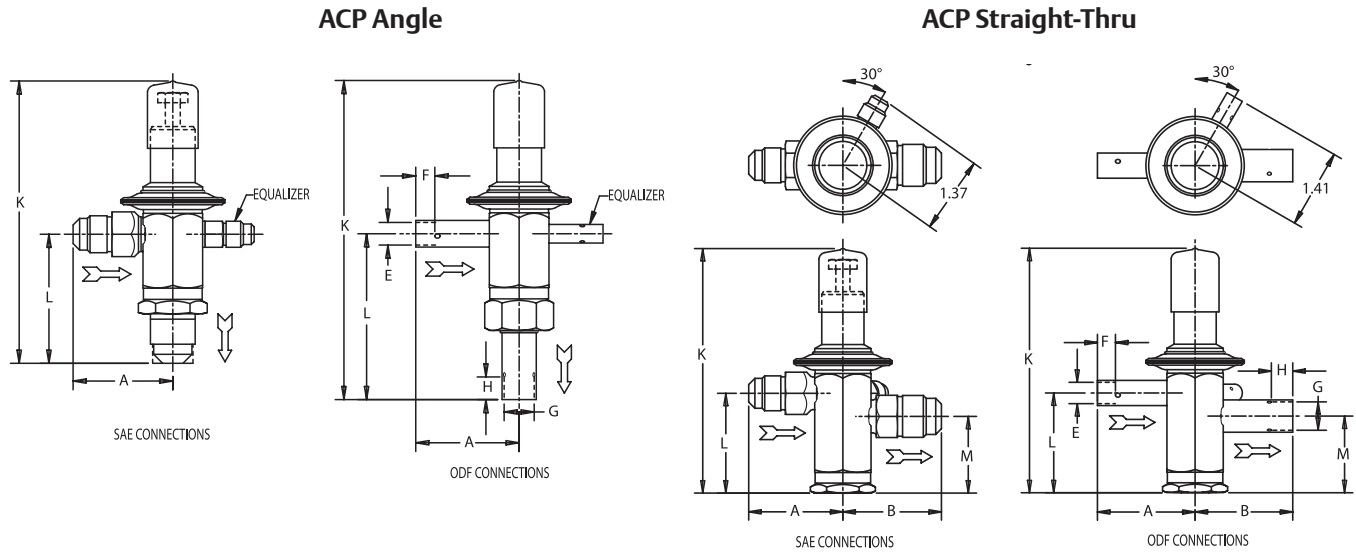
ACP(E)- Nominal* Capacity Table in Tons

Valve	Port Diameter (in)	R-12/R-134a	R-407C/R-22	R-502/R-404A/R-507
		Pressure Drop Across Valve – PSI		
		60	100	100
ACP(E)1	0.05	0.31	0.44	0.29
ACP(E)2	0.06	0.41	0.57	0.38
ACP(E)3	0.10	0.65	0.91	0.61
ACP(E)4	0.11	0.90	1.30	0.87
ACP(E)5	0.13	1.40	1.96	1.31
ACP(E)6	0.14	1.90	2.67	1.78
ACP(E)7	0.17	2.30	3.28	2.19
ACP(E)8	0.20	2.70	3.75	2.50
ACP(E)9	0.23	3.80	5.32	3.55

*All capacities shown are at 100°F Condensing, 40°F Evaporator Temperature, with a solid column of liquid at the valve inlet.

ACP(E)– Automatic

ACP Dimensional Data



Dimensional Data (in)

ACP(E) Valve Type	Inlet	Outlet	A	B	E DIA.	F MIN.	G DIA.	H MIN.	K	L						
Angle	1/4	3/8	1.50	-	-	-	-	-	4.50	2.13						
	3/8		1.64													
	1/2	3/8 - 1/2	1.72													
	1/4	1.50														
SAE	3/8	5/8	1.64	-	-	-	-	-	4.61	2.23						
	1/2		1.72													
	1/4	1.25														
	3/8	3/8	1.19								-	0.25	0.32	0.37	0.32	4.55
1/2	1/2	0.37		0.32	0.50	0.38										
ODF	5/8	5/8	1.38	-	-	-	0.62	0.50	4.73	2.36						
	1/4		1.25													
	3/8	1.19														
	1/4	1/2	1.25								0.25	0.32	0.50	0.38	4.55	2.17
	1/2	7/8	1.19								0.25	0.32	0.50	0.38	5.11	2.73

ACP(E) Valve Type	Inlet	Outlet	A	B	E DIA.	F MIN.	G DIA.	H MIN.	K	L	M									
Straight-Thru	1/4	3/8	1.50	1.64	-	-	-	-	4.25	1.88	1.48									
	3/8		1.64																	
	1/2	1/2	1.72																	
	1/4	1.50																		
SAE	3/8	5/8	1.64	1.98	-	-	-	-	4.25	1.88	1.48									
	1/2		1.72																	
	1/4	1.25																		
	3/8	3/8	1.19									-	0.25	0.32	0.37	0.32				
	1/2	1/2											0.37	0.32	0.50	0.38				
	ODF	1/2	5/8									1.19	1.38	-	-	0.50	0.38	4.25	1.88	1.48
		5/8										1.38								
		1/4	1.25																	
		3/8	1.19																	
		1/4	1/2									1.25								
1/2		7/8	1.19	0.25	0.32	0.50	0.38													
3/8		1.19	1.75	0.37	0.32	0.87	0.75													

R-450A/R-513A Conventional Valves (Tons) A Series

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
AA/AN/AAC/ANC/AFA	1/8	0.11	0.13	0.15	0.16	0.18	0.19	0.11	0.13	0.14	0.16	0.17	0.19	0.10	0.12	0.13	0.15	0.16	0.18
AA/AN/AAC/ANC/AFA	1/5	0.19	0.22	0.25	0.28	0.30	0.33	0.19	0.22	0.24	0.27	0.30	0.32	0.18	0.21	0.23	0.26	0.28	0.31
AA/AN/AAC/ANC/AFA	1/4	0.35	0.40	0.45	0.50	0.55	0.59	0.34	0.39	0.44	0.49	0.53	0.58	0.32	0.37	0.41	0.46	0.51	0.55
AA/AN/AAC/ANC/AFA	1/2	0.55	0.63	0.70	0.79	0.86	0.93	0.53	0.62	0.69	0.77	0.84	0.91	0.51	0.58	0.65	0.73	0.80	0.86
AA/AN/AAC/ANC/AFA	3/4	0.79	0.91	1.02	1.14	1.24	1.34	0.77	0.89	0.99	1.11	1.21	1.31	0.73	0.84	0.94	1.05	1.15	1.25
AA/AN/AAC/ANC/AFA	1	1.16	1.33	1.49	1.67	1.83	1.97	1.13	1.30	1.46	1.63	1.78	1.93	1.07	1.24	1.38	1.55	1.70	1.83
AA/AN/AAC/ANC/AFA	1-1/2	1.62	1.87	2.09	2.34	2.56	2.77	1.58	1.83	2.04	2.29	2.50	2.70	1.50	1.74	1.94	2.17	2.38	2.57
AA/AN/AAC/ANC/AFA	2	1.98	2.29	2.56	2.86	3.14	3.39	1.94	2.24	2.50	2.79	3.06	3.31	1.84	2.12	2.37	2.65	2.91	3.14
AA/AN/AAC/ANC/AFA	2-1/2	2.36	2.73	3.05	3.41	3.73	4.03	2.30	2.66	2.97	3.33	3.64	3.94	2.19	2.53	2.83	3.16	3.46	3.74
AA/AN/AAC/ANC/AFA	3	3.23	3.73	4.17	4.66	5.10	5.51	3.15	3.64	4.07	4.55	4.98	5.38	2.99	3.46	3.86	4.32	4.73	5.11

Note: Standard Capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 Psi pressure drop across the TXV.

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
AA/AN/AAC/ANC/AFA	1/8	0.08	0.09	0.10	0.11	0.12	0.13	0.06	0.06	0.07	0.08	0.08	0.09	0.03	0.04	0.04	0.04	0.05	0.05
AA/AN/AAC/ANC/AFA	1/5	0.13	0.15	0.17	0.19	0.21	0.22	0.10	0.11	0.12	0.13	0.15	0.16	0.06	0.06	0.07	0.08	0.08	0.09
AA/AN/AAC/ANC/AFA	1/4	0.23	0.27	0.30	0.34	0.37	0.40	0.18	0.20	0.22	0.24	0.26	0.28	0.10	0.11	0.13	0.14	0.15	0.16
AA/AN/AAC/ANC/AFA	1/2	0.37	0.42	0.47	0.53	0.58	0.63	0.28	0.31	0.35	0.38	0.41	0.44	0.16	0.18	0.20	0.22	0.24	0.25
AA/AN/AAC/ANC/AFA	3/4	0.53	0.61	0.68	0.76	0.84	0.90	0.40	0.45	0.50	0.55	0.59	0.63	0.23	0.26	0.29	0.31	0.34	0.36
AA/AN/AAC/ANC/AFA	1	0.78	0.90	1.00	1.12	1.23	1.33	0.59	0.66	0.74	0.81	0.87	0.93	0.34	0.38	0.42	0.46	0.50	0.53
AA/AN/AAC/ANC/AFA	1-1/2	1.09	1.26	1.41	1.58	1.73	1.86	0.83	0.93	1.03	1.13	1.22	1.31	0.47	0.53	0.59	0.65	0.70	0.75
AA/AN/AAC/ANC/AFA	2	1.33	1.54	1.72	1.93	2.11	2.28	1.01	1.13	1.26	1.39	1.50	1.60	0.58	0.65	0.72	0.79	0.85	0.91
AA/AN/AAC/ANC/AFA	2-1/2	1.59	1.83	2.05	2.29	2.51	2.71	1.20	1.35	1.51	1.65	1.78	1.90	0.69	0.77	0.86	0.94	1.02	1.09
AA/AN/AAC/ANC/AFA	3	2.17	2.51	2.80	3.14	3.44	3.71	1.65	1.84	2.06	2.25	2.44	2.60	0.94	1.05	1.17	1.29	1.39	1.49

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F															
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75	
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71	
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76	
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50	
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70	
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69	

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-448A/R-449A Conventional Valves (Tons) - A Series

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
AA/AN/AAC/ANC/AFA	1/5	0.15	0.18	0.20	0.22	0.24	0.26	0.15	0.17	0.19	0.22	0.24	0.26	0.15	0.17	0.19	0.21	0.23	0.25
AA/AN/AAC/ANC/AFA	1/4	0.27	0.31	0.34	0.38	0.42	0.45	0.26	0.30	0.34	0.38	0.41	0.45	0.26	0.30	0.33	0.37	0.40	0.44
AA/AN/AAC/ANC/AFA	1/2	0.47	0.54	0.60	0.67	0.74	0.80	0.46	0.53	0.60	0.67	0.73	0.79	0.45	0.52	0.58	0.65	0.71	0.77
AA/AN/AAC/ANC/AFA	1	0.75	0.86	0.96	1.08	1.18	1.28	0.74	0.85	0.95	1.07	1.17	1.26	0.72	0.83	0.93	1.04	1.14	1.23
AA/AN/AAC/ANC/AFA	1-1/2	1.07	1.23	1.38	1.54	1.69	1.82	1.06	1.22	1.36	1.53	1.67	1.81	1.03	1.19	1.33	1.49	1.63	1.76
AA/AN/AAC/ANC/AFA	2	1.57	1.82	2.03	2.27	2.49	2.69	1.56	1.80	2.01	2.25	2.46	2.66	1.52	1.76	1.96	2.20	2.40	2.60
AA/AN/AAC/ANC/AFA	2-3/4	2.21	2.55	2.85	3.19	3.49	3.77	2.19	2.52	2.82	3.16	3.46	3.73	2.13	2.46	2.75	3.08	3.37	3.64
AA/AN/AAC/ANC/AFA	3-1/2	2.71	3.13	3.49	3.91	4.28	4.62	2.68	3.09	3.46	3.87	4.24	4.57	2.61	3.02	3.38	3.77	4.13	4.47
AA/AN/AAC/ANC/AFA	4	3.21	3.71	4.15	4.64	5.08	5.49	3.18	3.67	4.10	4.59	5.03	5.43	3.10	3.58	4.01	4.48	4.91	5.30
AA/AN/AAC/ANC/AFA	5-1/2	4.39	5.07	5.67	6.34	6.95	7.50	4.35	5.02	5.61	6.28	6.87	7.43	4.24	4.90	5.48	6.13	6.71	7.25

Note: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 100 Psi pressure drop across the TXV.

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)						Pressure Drop Across Valve (psi)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
AA/AN/AAC/ANC/AFA	1/5	0.14	0.17	0.19	0.21	0.23	0.24	0.13	0.15	0.16	0.18	0.19	0.21	0.09	0.10	0.11	0.12	0.13	0.14
AA/AN/AAC/ANC/AFA	1/4	0.25	0.29	0.32	0.36	0.39	0.43	0.23	0.25	0.28	0.31	0.34	0.36	0.15	0.17	0.19	0.21	0.23	0.24
AA/AN/AAC/ANC/AFA	1/2	0.44	0.51	0.57	0.63	0.69	0.75	0.40	0.45	0.50	0.55	0.59	0.63	0.27	0.30	0.34	0.37	0.40	0.43
AA/AN/AAC/ANC/AFA	1	0.70	0.81	0.91	1.01	1.11	1.20	0.64	0.72	0.80	0.88	0.95	1.01	0.43	0.48	0.54	0.59	0.64	0.68
AA/AN/AAC/ANC/AFA	1-1/2	1.00	1.16	1.30	1.45	1.59	1.71	0.92	1.02	1.15	1.26	1.36	1.45	0.62	0.69	0.77	0.85	0.92	0.98
AA/AN/AAC/ANC/AFA	2	1.48	1.71	1.91	2.14	2.34	2.53	1.35	1.51	1.69	1.85	2.00	2.14	0.91	1.02	1.14	1.25	1.35	1.44
AA/AN/AAC/ANC/AFA	2-3/4	2.08	2.40	2.68	3.00	3.28	3.54	1.90	2.12	2.37	2.60	2.80	3.00	1.28	1.43	1.60	1.75	1.89	2.02
AA/AN/AAC/ANC/AFA	3-1/2	2.54	2.94	3.28	3.67	4.02	4.34	2.32	2.60	2.90	3.18	3.44	3.67	1.57	1.75	1.96	2.15	2.32	2.48
AA/AN/AAC/ANC/AFA	4	3.02	3.49	3.90	4.36	4.77	5.16	2.76	3.08	3.45	3.77	4.08	4.36	1.86	2.08	2.33	2.55	2.75	2.94
AA/AN/AAC/ANC/AFA	5-1/2	4.13	4.77	5.33	5.96	6.53	7.05	3.77	4.21	4.71	5.16	5.58	5.96	2.55	2.85	3.18	3.49	3.76	4.02

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F														
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

Note: Standard capacity is rated at 100°F liquid inlet and 40°F evaporated temperature, with 60 Psi pressure drop across the TXV.

R-410A Conventional Valves (Tons)– A Series

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	110	140	160	210	245	285	110	140	160	210	245	285	110	140	160	210	245	285	
AA/AN/AAC/ANC/AFA	1/4	0.34	0.38	0.41	0.47	0.51	0.55	0.34	0.38	0.41	0.47	0.51	0.55	0.33	0.37	0.40	0.46	0.49	0.53
AA/AN/AAC/ANC/AFA	1/2	0.60	0.68	0.72	0.83	0.90	0.97	0.59	0.67	0.71	0.82	0.88	0.95	0.58	0.65	0.70	0.80	0.87	0.93
AA/AN/AAC/ANC/AFA	1	0.96	1.08	1.16	1.33	1.43	1.55	0.95	1.07	1.15	1.31	1.42	1.53	0.93	1.05	1.12	1.28	1.39	1.50
AA/AN/AAC/ANC/AFA	1-1/2	1.38	1.56	1.66	1.91	2.06	2.22	1.36	1.53	1.64	1.88	2.03	2.19	1.33	1.50	1.60	1.84	1.98	2.14
AA/AN/AAC/ANC/AFA	2	2.03	2.29	2.45	2.80	3.03	3.27	2.01	2.27	2.42	2.78	3.00	3.24	1.96	2.21	2.36	2.71	2.93	3.15
AA/AN/AAC/ANC/AFA	3	2.85	3.22	3.44	3.94	4.25	4.59	2.82	3.18	3.40	3.90	4.21	4.54	2.74	3.09	3.30	3.79	4.09	4.41
AA/AN/AAC/ANC/AFA	4	3.49	3.94	4.21	4.82	5.21	5.62	3.45	3.89	4.16	4.77	5.15	5.55	3.36	3.79	4.05	4.64	5.01	5.41
AA/AN/AAC/ANC/AFA	5	4.14	4.67	4.99	5.72	6.18	6.66	4.10	4.63	4.94	5.66	6.12	6.60	3.99	4.50	4.81	5.51	5.95	6.42

Note: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 160 Psi pressure drop across the TXV per ARI 750-2001.

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	140	160	210	245	285	330	140	160	210	245	285	330	140	160	210	245	285	330	
AA/AN/AAC/ANC/AFA	1/4	0.34	0.36	0.42	0.45	0.49	0.52	0.24	0.26	0.29	0.32	0.34	0.37	0.16	0.17	0.20	0.21	0.23	0.25
AA/AN/AAC/ANC/AFA	1/2	0.60	0.64	0.73	0.79	0.86	0.92	0.41	0.44	0.50	0.54	0.58	0.63	0.27	0.29	0.33	0.36	0.39	0.41
AA/AN/AAC/ANC/AFA	1	0.95	1.02	1.16	1.26	1.36	1.46	0.66	0.71	0.81	0.87	0.94	1.01	0.44	0.47	0.54	0.58	0.63	0.68
AA/AN/AAC/ANC/AFA	1-1/2	1.36	1.45	1.67	1.80	1.94	2.09	0.95	1.02	1.16	1.26	1.36	1.46	0.63	0.67	0.77	0.83	0.90	0.97
AA/AN/AAC/ANC/AFA	2	2.01	2.15	2.46	2.66	2.87	3.09	1.40	1.50	1.71	1.85	2.00	2.15	0.93	0.99	1.14	1.23	1.33	1.43
AA/AN/AAC/ANC/AFA	3	2.82	3.01	3.45	3.73	4.02	4.33	1.96	2.10	2.40	2.59	2.80	3.01	1.30	1.39	1.59	1.72	1.85	2.00
AA/AN/AAC/ANC/AFA	4	3.46	3.70	4.24	4.58	4.94	5.31	2.40	2.57	2.94	3.17	3.42	3.68	1.60	1.71	1.96	2.12	2.28	2.46
AA/AN/AAC/ANC/AFA	5	4.10	4.38	5.02	5.42	5.85	6.29	2.85	3.05	3.49	3.77	4.07	4.38	1.89	2.02	2.31	2.50	2.70	2.90

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F															
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75	
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71	
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76	
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50	
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70	
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69	

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-12 Balanced Ported Valves (Tons)– HF, TRAE and T Series

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175	
HF	1/8	0.17	0.20	0.22	0.25	0.27	0.29	0.17	0.20	0.22	0.25	0.27	0.29	0.16	0.18	0.21	0.23	0.25	0.27
HF	1/4	0.32	0.37	0.41	0.46	0.51	0.55	0.31	0.36	0.40	0.45	0.49	0.53	0.30	0.35	0.39	0.43	0.47	0.51
HF	1/2	0.57	0.66	0.74	0.82	0.90	0.97	0.56	0.65	0.72	0.81	0.89	0.96	0.54	0.62	0.70	0.78	0.85	0.92
HF	1	0.88	1.02	1.14	1.27	1.39	1.50	0.86	0.99	1.11	1.24	1.36	1.47	0.82	0.95	1.06	1.18	1.30	1.40
HF	1-1/4	1.18	1.36	1.52	1.70	1.87	2.02	1.16	1.34	1.50	1.67	1.83	1.98	1.11	1.28	1.43	1.60	1.76	1.90
HF	1-1/2	1.51	1.74	1.95	2.18	2.39	2.58	1.48	1.71	1.91	2.14	2.34	2.53	1.42	1.64	1.83	2.05	2.25	2.43
HF	2	2.00	2.31	2.58	2.89	3.16	3.42	1.96	2.26	2.53	2.83	3.10	3.35	1.88	2.17	2.43	2.71	2.97	3.21
HF	3-1/2	3.55	4.10	4.58	5.12	5.61	6.06	3.48	4.02	4.49	5.02	5.50	5.94	3.34	3.86	4.31	4.82	5.28	5.70
HF	5	4.94	5.70	6.38	7.13	7.81	8.44	4.85	5.60	6.26	7.00	7.67	8.28	4.65	5.37	6.00	6.71	7.35	7.94
HF	6	6.26	7.23	8.08	9.04	9.90	10.69	6.13	7.08	7.91	8.85	9.69	10.47	5.88	6.79	7.59	8.49	9.30	10.04
HF	9	9.28	10.72	11.98	13.39	14.67	15.85	9.10	10.51	11.75	13.13	14.39	15.54	8.73	10.08	11.27	12.60	13.80	14.91
HF	12	12.22	14.11	15.78	17.64	19.32	20.87	11.98	13.83	15.47	17.29	18.94	20.46	11.49	13.27	14.83	16.58	18.17	19.62
TRAE+	7-1/2	7.14	8.24	9.22	10.31	11.29	12.19	7.00	8.08	9.04	10.10	11.07	11.95	6.71	7.75	8.66	9.69	10.61	11.46
TRAE+	10	10.41	12.02	13.44	15.03	16.46	17.78	10.20	11.78	13.17	14.72	16.13	17.42	9.78	11.29	12.63	14.12	15.46	16.70
TRAE+	12	11.62	13.42	15.00	16.77	18.37	19.84	11.39	13.15	14.70	16.44	18.01	19.45	10.92	12.61	14.10	15.76	17.27	18.65
TRAE+	18	17.61	20.33	22.73	25.42	27.84	30.07	17.26	19.93	22.28	24.91	27.29	29.48	16.55	19.11	21.37	23.89	26.17	28.26
TRAE+	25	24.20	27.94	31.24	34.93	38.26	41.33	23.73	27.40	30.64	34.25	37.52	40.53	22.75	26.27	29.37	32.84	35.97	38.85
TRAE	30	32.67	37.72	42.18	47.16	51.66	55.79	32.03	36.99	41.35	46.23	50.64	54.70	30.72	35.47	39.66	44.34	48.57	52.46
TRAE	35	35.64	41.15	46.01	51.44	56.35	60.87	34.94	40.35	45.11	50.43	55.24	59.67	33.51	38.69	43.26	48.37	52.98	57.23
TRAE	40	42.41	48.97	54.75	61.21	67.06	72.43	41.58	48.01	53.68	60.02	65.74	71.01	39.88	46.05	51.48	57.56	63.06	68.11
TJR	8	8.89	10.27	11.48	12.83	14.06	15.18	8.72	10.07	11.26	12.59	13.79	14.89	8.36	9.65	10.79	12.07	13.22	14.28
TJR	11	10.65	12.30	13.75	15.37	16.84	18.19	10.44	12.06	13.48	15.07	16.51	17.83	10.01	11.56	12.92	14.45	15.83	17.10
TER	13	13.31	15.37	17.18	19.21	21.04	22.73	13.05	15.07	16.85	18.84	20.63	22.29	12.51	14.45	16.15	18.06	19.78	21.36
TER	15	15.73	18.16	20.31	22.70	24.87	26.86	15.42	17.81	19.91	22.26	24.38	26.33	14.79	17.08	19.09	21.35	23.39	25.26
TER	20	21.18	24.46	27.34	30.57	33.49	36.17	20.76	23.97	26.80	29.96	32.82	35.45	19.91	22.99	25.70	28.74	31.48	34.00
TER	25	27.23	31.44	35.15	39.30	43.05	46.50	26.69	30.82	34.46	38.52	42.20	45.58	25.60	29.56	33.05	36.95	40.48	43.72
TIR	35	31.29	36.13	40.40	45.16	49.47	53.44	23.63	27.29	30.51	34.11	37.36	40.36	31.29	36.13	40.40	45.16	49.47	53.44
THR	45	42.35	48.90	54.67	61.13	66.96	72.33	41.52	47.94	53.60	59.93	65.65	70.91	39.82	45.98	51.41	57.48	62.96	68.01
THR	55	51.43	59.39	66.40	74.23	81.32	87.83	50.42	58.22	65.09	72.78	79.72	86.11	48.35	55.83	62.42	69.79	76.45	82.57
TMR	55	60.50	69.86	78.11	87.32	95.66	103.32	59.32	68.50	76.58	85.62	93.79	101.31	56.89	65.69	73.44	82.11	89.95	97.16

Note: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 60 Psi pressure drop across the TXV per ARI 750-2001.

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F															
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75	
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71	
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76	
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50	
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70	
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69	

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-12 Balanced Ported Valves (Tons)– HF, TRAE and T Series (cont.)

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F					-20°F					-40°F							
		Pressure Drop Across Valve (PSI)					Pressure Drop Across Valve (PSI)					Pressure Drop Across Valve (PSI)							
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200	
HF	1/8	0.14	0.16	0.18	0.20	0.22	0.24	0.11	0.12	0.14	0.15	0.16	0.17	0.07	0.08	0.09	0.10	0.10	0.11
HF	1/4	0.27	0.31	0.35	0.39	0.43	0.46	0.21	0.23	0.26	0.29	0.31	0.33	0.14	0.16	0.18	0.19	0.21	0.22
HF	1/2	0.48	0.55	0.62	0.69	0.76	0.82	0.38	0.42	0.48	0.52	0.56	0.60	0.24	0.27	0.30	0.33	0.35	0.38
HF	1	0.73	0.84	0.94	1.05	1.15	1.25	0.57	0.64	0.71	0.78	0.84	0.90	0.37	0.41	0.46	0.51	0.55	0.59
HF	1-1/4	0.98	1.13	1.27	1.41	1.55	1.67	0.77	0.86	0.96	1.05	1.14	1.22	0.50	0.56	0.63	0.68	0.74	0.79
HF	1-1/2	1.26	1.45	1.63	1.82	1.99	2.15	0.99	1.11	1.24	1.36	1.46	1.57	0.64	0.72	0.80	0.88	0.95	1.01
HF	2	1.66	1.92	2.14	2.40	2.62	2.83	1.30	1.45	1.63	1.78	1.92	2.06	0.85	0.95	1.06	1.16	1.26	1.34
HF	3-1/2	2.96	3.42	3.82	4.27	4.68	5.06	2.32	2.59	2.90	3.18	3.43	3.67	1.51	1.69	1.89	2.07	2.23	2.39
HF	5	4.12	4.76	5.32	5.95	6.51	7.04	3.23	3.61	4.04	4.42	4.78	5.11	2.10	2.35	2.63	2.88	3.11	3.32
HF	6	5.21	6.02	6.73	7.52	8.24	8.90	4.08	4.56	5.10	5.59	6.03	6.45	2.66	2.97	3.33	3.64	3.93	4.21
HF	9	7.73	8.93	9.98	11.16	12.22	13.20	6.06	6.78	7.58	8.30	8.96	9.58	3.94	4.41	4.93	5.40	5.83	6.23
HF	12	10.17	11.74	13.13	14.68	16.08	17.37	7.97	8.91	9.96	10.91	11.79	12.60	5.18	5.79	6.48	7.09	7.66	8.19
TRAE+	7-1/2	5.95	6.87	7.68	8.59	9.41	10.16	4.66	5.21	5.83	6.38	6.89	7.37	3.03	3.39	3.79	4.15	4.48	4.79
TRAE+	10	8.67	10.01	11.19	12.51	13.71	14.81	6.79	7.59	8.49	9.30	10.04	10.74	4.42	4.94	5.53	6.05	6.54	6.99
TRAE+	12	9.67	11.17	12.48	13.96	15.29	16.51	7.58	8.47	9.48	10.38	11.21	11.99	4.93	5.51	6.16	6.75	7.29	7.80
TRAE+	18	14.66	16.93	18.93	21.16	23.18	25.04	11.49	12.85	14.36	15.73	16.99	18.17	7.47	8.35	9.34	10.23	11.05	11.81
TRAE+	25	20.15	23.27	26.01	29.08	31.86	34.41	15.80	17.66	19.75	21.64	23.37	24.98	10.27	11.48	12.84	14.06	15.19	16.24
TRAE	30	27.21	31.42	35.13	39.27	43.02	46.47	21.33	23.85	26.66	29.21	31.55	33.73	13.87	15.51	17.34	18.99	20.51	21.93
TRAE	35	29.68	34.27	38.32	42.84	46.93	50.69	23.26	26.01	29.08	31.85	34.40	36.78	15.13	16.92	18.91	20.72	22.38	23.92
TRAE	40	35.32	40.78	45.60	50.98	55.85	60.32	27.68	30.95	34.60	37.90	40.94	43.77	18.00	20.12	22.50	24.65	26.62	28.46
TJR	8	7.41	8.56	9.57	10.70	11.72	12.65	5.81	6.50	7.26	7.96	8.59	9.19	3.77	4.21	4.71	5.16	5.58	5.96
TJR	11	8.87	10.24	11.45	12.80	14.02	15.15	6.95	7.77	8.69	9.52	10.28	10.99	4.52	5.05	5.65	6.19	6.69	7.15
TER	13	11.08	12.79	14.30	15.99	17.52	18.92	8.69	9.72	10.86	11.90	12.85	13.74	5.65	6.32	7.06	7.74	8.36	8.93
TER	15	13.10	15.13	16.91	18.91	20.71	22.37	10.27	11.48	12.84	14.06	15.19	16.24	6.68	7.47	8.35	9.15	9.88	10.56
TER	20	17.64	20.37	22.77	25.46	27.89	30.13	13.82	15.45	17.28	18.92	20.44	21.85	8.99	10.05	11.24	12.31	13.30	14.21
TER	25	22.67	26.18	29.27	32.72	35.84	38.72	17.77	19.87	22.21	24.33	26.28	28.10	11.56	12.92	14.45	15.83	17.10	18.28
TIR	35	27.71	32.00	35.77	40.00	43.81	47.32	21.72	24.28	27.15	29.74	32.12	34.34	14.12	15.79	17.65	19.33	20.88	22.33
THR	45	35.27	40.73	45.53	50.91	55.77	60.23	27.64	30.90	34.55	37.85	40.88	43.70	17.98	20.10	22.48	24.62	26.59	28.43
THR	55	42.83	49.46	55.29	61.82	67.72	73.15	33.57	37.53	41.96	45.97	49.65	53.08	21.83	24.41	27.29	29.89	32.29	34.52
TMR	55	50.39	58.19	65.05	72.73	79.67	86.06	39.49	44.15	49.36	54.07	58.41	62.44	25.68	28.71	32.10	35.16	37.98	40.60

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F														
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-407C Balanced Ported Valves (Tons)– HF, TFE, TRAE and T Series (cont.)

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F					-20°F					-40°F							
		Pressure Drop Across Valve (PSI)					Pressure Drop Across Valve (PSI)					Pressure Drop Across Valve (PSI)							
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200	
HF	1/4	0.17	0.20	0.22	0.25	0.27	0.29	0.13	0.15	0.16	0.18	0.19	0.21	0.08	0.09	0.10	0.11	0.12	0.13
HF	1/2	0.32	0.37	0.41	0.46	0.51	0.55	0.24	0.27	0.30	0.33	0.35	0.38	0.15	0.17	0.19	0.21	0.22	0.24
HF	1	0.57	0.66	0.74	0.82	0.90	0.97	0.43	0.48	0.54	0.59	0.64	0.68	0.27	0.30	0.34	0.37	0.40	0.43
HF	1-1/2	0.87	1.00	1.12	1.26	1.38	1.49	0.66	0.74	0.83	0.90	0.98	1.04	0.42	0.47	0.53	0.58	0.62	0.66
HF	2	1.17	1.35	1.51	1.69	1.85	2.00	0.89	1.00	1.11	1.22	1.32	1.41	0.56	0.63	0.70	0.77	0.83	0.89
HF	2-1/2	1.50	1.73	1.94	2.17	2.37	2.56	1.14	1.27	1.43	1.56	1.69	1.80	0.72	0.80	0.90	0.99	1.06	1.14
HF	3	1.98	2.29	2.56	2.86	3.13	3.38	1.51	1.69	1.89	2.07	2.23	2.39	0.95	1.06	1.19	1.30	1.41	1.50
HF	5-1/2	3.52	4.06	4.54	5.08	5.57	6.01	2.68	3.00	3.35	3.67	3.96	4.24	1.69	1.89	2.11	2.31	2.50	2.67
HF	8	4.90	5.66	6.33	7.07	7.75	8.37	3.73	4.17	4.66	5.11	5.52	5.90	2.35	2.63	2.94	3.22	3.48	3.72
HF	10	6.20	7.16	8.00	8.95	9.80	10.59	4.72	5.28	5.90	6.46	6.98	7.46	2.97	3.32	3.71	4.07	4.39	4.70
HF	15	9.20	10.62	11.88	13.28	14.55	15.71	7.01	7.84	8.76	9.60	10.37	11.08	4.41	4.93	5.51	6.04	6.52	6.97
HF	20	12.11	13.98	15.63	17.48	19.15	20.68	9.22	10.31	11.53	12.63	13.64	14.58	5.81	6.50	7.26	7.96	8.59	9.19
TFE	8	4.81	5.55	6.21	6.94	7.61	8.21	3.66	4.09	4.58	5.01	5.41	5.79	2.31	2.58	2.89	3.16	3.42	3.65
TFE	10	6.59	7.61	8.51	9.51	10.42	11.25	5.02	5.61	6.28	6.87	7.42	7.94	3.16	3.53	3.95	4.33	4.67	5.00
TFE	12	8.18	9.45	10.56	11.81	12.93	13.97	6.23	6.97	7.79	8.53	9.21	9.85	3.92	4.38	4.90	5.37	5.80	6.20
TFE	20	12.49	14.42	16.12	18.03	19.75	21.33	9.51	10.63	11.89	13.02	14.07	15.04	5.98	6.69	7.48	8.19	8.84	9.46
TRAE+	10	7.08	8.18	9.14	10.22	11.19	12.09	5.39	6.03	6.74	7.38	7.97	8.52	3.39	3.79	4.24	4.64	5.01	5.36
TRAE+	15	10.32	11.92	13.32	14.90	16.32	17.62	7.86	8.79	9.83	10.76	11.63	12.43	4.95	5.53	6.19	6.78	7.32	7.83
TRAE+	20	11.52	13.30	14.87	16.63	18.21	19.67	8.77	9.81	10.96	12.01	12.97	13.87	5.52	6.17	6.90	7.56	8.16	8.73
TRAE+	30	17.46	20.16	22.54	25.20	27.61	29.82	13.30	14.87	16.63	18.21	19.67	21.03	8.37	9.36	10.46	11.46	12.38	13.23
TRAE+	40	24.00	27.71	30.98	34.64	37.95	40.99	18.28	20.44	22.85	25.03	27.04	28.90	11.50	12.86	14.38	15.75	17.01	18.18
TRAE	50	32.40	37.41	41.83	46.77	51.23	55.33	24.67	27.58	30.84	33.78	36.49	39.01	15.53	17.36	19.41	21.27	22.97	24.56
TRAE	60	35.34	40.81	45.62	51.01	55.88	60.35	26.91	30.09	33.64	36.85	39.80	42.55	16.94	18.94	21.18	23.20	25.05	26.78
TRAE	70	42.06	48.57	54.30	60.71	66.50	71.83	32.03	35.81	40.04	43.86	47.37	50.84	20.16	22.54	25.20	27.61	29.82	31.88
TJR	14	8.82	10.18	11.39	12.73	13.95	15.06	6.72	7.51	8.40	9.20	9.94	10.63	4.23	4.73	5.29	5.79	6.26	6.69
TJR	18	10.56	12.19	13.63	15.24	16.70	18.03	8.04	8.99	10.05	11.01	11.89	12.71	5.06	5.66	6.33	6.93	7.48	8.00
TER	22	13.20	15.24	17.04	19.05	20.87	22.54	10.05	11.24	12.56	13.76	14.86	15.89	6.33	7.08	7.91	8.67	9.36	10.01
TER	26	15.60	18.01	20.14	22.52	24.67	26.64	11.88	13.28	14.85	16.27	17.57	18.78	7.48	8.36	9.35	10.24	11.06	11.83
TER	35	21.00	24.25	27.11	30.31	33.20	35.86	15.99	17.88	19.99	21.90	23.65	25.28	10.06	11.25	12.58	13.78	14.88	15.91
TER	45	27.00	31.18	34.86	38.97	42.69	46.11	20.56	22.99	25.70	28.15	30.41	32.51	12.94	14.47	16.18	17.72	19.14	20.46
TIR	55	33.00	38.11	42.60	47.63	52.18	56.36	25.13	28.10	31.41	34.41	37.17	39.73	15.82	17.69	19.78	21.66	23.40	25.01
THR	75	42.00	48.50	54.22	60.62	66.41	71.73	31.98	35.75	39.98	43.79	47.30	50.56	20.13	22.51	25.16	27.56	29.77	31.83
THR	100	51.00	58.89	65.84	73.61	80.64	87.10	38.84	43.42	48.55	53.18	57.45	61.41	24.44	27.32	30.55	33.47	36.15	38.64
TMR	100	60.00	69.28	77.46	86.60	94.87	102.47	45.69	51.08	57.11	62.56	67.58	72.24	28.76	32.15	35.95	39.38	42.54	45.47

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F														
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-410A Balanced Ported Valves (Tons) – NXT Series

Valve Type	Nominal Rating Tons	Evaporator Temperature																				
		50 °F							40 °F							20 °F						
		Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)						
		75	110	140	160	210	240	285	75	110	140	160	210	240	285	75	110	140	160	210	240	285
NXT-Series	1/2	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.4	0.5	0.5	0.5	0.6	0.6	0.7
	1	0.7	0.8	0.9	1.0	1.2	1.2	1.3	0.7	0.8	0.9	1.0	1.1	1.2	1.3	0.7	0.8	0.9	1.0	1.1	1.2	1.3
	1-1/2	1.0	1.3	1.4	1.5	1.7	1.9	2.0	1.0	1.2	1.4	1.5	1.7	1.8	2.0	1.0	1.2	1.4	1.5	1.7	1.8	2.0
	2	1.4	1.7	1.9	2.0	2.3	2.5	2.7	1.4	1.7	1.9	2.0	2.3	2.4	2.7	1.3	1.6	1.8	2.0	2.2	2.4	2.6
	3	2.1	2.5	2.8	3.0	3.5	3.7	4.0	2.1	2.5	2.8	3.0	3.4	3.7	4.0	2.0	2.4	2.7	2.9	3.4	3.6	3.9
	4	2.8	3.3	3.8	4.0	4.6	4.9	5.4	2.7	3.3	3.7	4.0	4.6	4.9	5.3	2.7	3.2	3.7	3.9	4.5	4.8	5.2
	5	3.5	4.2	4.7	5.0	5.8	6.2	6.7	3.4	4.1	4.7	5.0	5.7	6.1	6.7	3.3	4.1	4.6	4.9	5.6	6.0	6.5
	6	4.1	5.0	5.7	6.1	6.9	7.4	8.1	4.1	5.0	5.6	6.0	6.9	7.3	8.0	4.0	4.9	5.5	5.9	6.7	7.2	7.8
	7	4.8	5.9	6.6	7.1	8.1	8.6	9.4	4.8	5.8	6.5	7.0	8.0	8.6	9.3	4.7	5.7	6.4	6.8	7.8	8.4	9.1
	8	5.8	7.0	7.9	8.5	9.7	10.4	11.3	5.7	7.0	7.8	8.4	9.6	10.3	11.2	5.6	6.8	7.7	8.2	9.4	10.1	11.0
	10	7.1	8.6	9.7	10.4	11.9	12.7	13.9	7.1	8.5	9.6	10.3	11.8	12.6	13.8	6.9	8.4	9.4	10.1	11.6	12.4	13.5
	12	8.7	10.6	11.9	12.7	14.6	15.6	17.0	8.6	10.5	11.8	12.6	14.5	15.5	16.9	8.5	10.2	11.6	12.4	14.2	15.1	16.5
	15	10.2	12.4	14.0	14.9	17.1	18.3	19.9	10.1	12.3	13.8	14.8	16.9	18.1	19.7	9.9	12.0	13.5	14.5	16.6	17.7	19.3
	Valve Type	Nominal Rating Tons	Evaporator Temperature																			
			0 °F							-20 °F							-40 °F					
Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)								
75			110	140	160	210	240	285	75	110	140	160	210	240	285	75	110	140	160	210	240	285
NXT-Series	1/2	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.3	0.4	0.5	0.6	0.6	0.6	0.7
	1	0.7	0.8	0.9	1.0	1.1	1.2	1.3	0.6	0.6	0.9	0.9	1.1	1.1	1.2	0.6	0.7	0.8	0.9	1.0	1.1	1.2
	1-1/2	1.0	1.2	1.3	1.4	1.6	1.8	1.9	0.9	1.1	1.3	1.4	1.6	1.7	1.8	0.9	1.1	1.2	1.3	1.5	1.6	1.8
	2	1.3	1.6	1.8	1.9	2.2	2.3	2.5	1.3	1.5	1.7	1.8	2.1	2.3	2.5	1.2	1.5	1.7	1.8	2.0	2.2	2.4
	3	2.0	2.4	2.7	2.9	3.3	3.5	3.8	1.9	2.3	2.6	2.8	3.2	3.4	3.7	1.8	2.2	2.5	2.7	3.1	3.3	3.6
	4	2.6	3.2	3.6	3.8	4.4	4.7	5.1	2.5	3.1	3.5	3.7	4.2	4.5	4.9	2.4	3.0	3.3	3.6	4.1	4.4	4.8
	5	3.3	3.9	4.5	4.8	5.5	5.8	6.4	3.2	3.8	4.3	4.6	5.3	5.7	6.2	3.0	3.7	4.2	4.5	5.1	5.5	5.9
	6	3.9	4.7	5.3	5.7	6.5	7.0	7.6	3.8	4.6	5.2	5.5	6.3	6.8	7.4	3.7	4.4	5.0	5.3	6.1	6.5	7.1
	7	4.8	5.9	6.6	6.7	8.1	8.6	9.4	4.4	5.4	6.0	6.5	7.4	7.9	8.6	4.3	5.2	5.8	6.2	7.1	7.6	8.3
	8	5.5	6.6	7.5	8.0	9.2	9.8	10.7	5.3	6.4	7.2	7.7	8.9	9.5	10.3	5.1	6.2	7.0	7.5	8.6	9.2	10.0
	10	6.7	8.1	9.2	9.8	11.3	12.0	13.1	6.5	7.9	8.9	9.5	10.9	11.7	12.7	6.3	7.6	8.6	9.2	10.5	11.2	12.3
	12	8.2	10.0	11.3	12.0	13.8	14.7	16.1	8.0	9.7	10.9	11.7	13.4	14.3	15.6	7.7	9.3	10.5	11.2	12.9	13.8	15.0
	15	9.6	11.7	13.2	14.1	16.1	17.3	18.8	9.3	11.3	12.8	13.7	15.6	16.7	18.2	9.0	10.3	12.3	13.2	15.1	15.1	17.6

Note: Standard capacity is rated at 100 °F liquid inlet and 40 °F evap temperature; with 160 Psi pressure drop across TXV per ARI-750-2001. These ratings assume vapor free liquid entering the thermal expansion valve.

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F									
	50	60	70	80	90	100	110	120	130	140
R-410A Correction Factor	1.37	1.30	1.23	1.15	1.08	1.00	0.92	0.84	0.75	0.65

These factors include corrections for liquid refrigerant density and net refrigeration effect, and are based on an average evaporator temperature of 0°F with a maximum 7°F Change in Superheat. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-502 Balanced Ported Valves (Tons)– HF, TFE, TRAE and T Series

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F					40°F					20°F							
		Pressure Drop Across Valve (PSI)					Pressure Drop Across Valve (PSI)					Pressure Drop Across Valve (PSI)							
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175	
HF	1/8	0.14	0.16	0.18	0.20	0.22	0.24	0.14	0.16	0.18	0.20	0.22	0.24	0.13	0.15	0.17	0.19	0.21	0.22
HF	1/4	0.27	0.31	0.35	0.39	0.43	0.46	0.27	0.31	0.35	0.39	0.43	0.46	0.25	0.29	0.32	0.36	0.40	0.43
HF	1/2	0.49	0.57	0.63	0.71	0.77	0.84	0.48	0.55	0.62	0.69	0.76	0.82	0.46	0.53	0.59	0.66	0.73	0.79
HF	1	0.74	0.85	0.96	1.07	1.17	1.26	0.73	0.84	0.94	1.05	1.15	1.25	0.70	0.81	0.90	1.01	1.11	1.20
HF	1-1/4	1.00	1.15	1.29	1.44	1.58	1.71	0.98	1.13	1.27	1.41	1.55	1.67	0.93	1.07	1.20	1.34	1.47	1.59
HF	1-1/2	1.28	1.48	1.65	1.85	2.02	2.19	1.26	1.45	1.63	1.82	1.99	2.15	1.20	1.39	1.55	1.73	1.90	2.05
HF	2	1.69	1.95	2.18	2.44	2.67	2.89	1.66	1.92	2.14	2.40	2.62	2.83	1.58	1.82	2.04	2.28	2.50	2.70
HF	3-1/2	3.01	3.48	3.89	4.34	4.76	5.14	2.95	3.41	3.81	4.26	4.66	5.04	2.81	3.24	3.63	4.06	4.44	4.80
HF	5	4.19	4.84	5.41	6.05	6.62	7.16	4.10	4.73	5.29	5.92	6.48	7.00	3.92	4.53	5.06	5.66	6.20	6.69
HF	7	5.30	6.12	6.84	7.65	8.38	9.05	5.19	5.99	6.70	7.49	8.21	8.86	4.96	5.73	6.40	7.16	7.84	8.47
HF	10	7.87	9.09	10.16	11.36	12.44	13.44	7.70	8.89	9.94	11.11	12.17	13.15	7.35	8.49	9.49	10.61	11.62	12.55
HF	13	10.36	11.96	13.37	14.95	16.38	17.69	10.14	11.71	13.09	14.64	16.03	17.32	9.68	11.18	12.50	13.97	15.31	16.53
TFE	5	4.11	4.75	5.31	5.93	6.50	7.02	4.03	4.65	5.20	5.82	6.37	6.88	3.84	4.43	4.96	5.54	6.07	6.56
TFE	7	5.63	6.50	7.27	8.13	8.90	9.62	5.51	6.36	7.11	7.95	8.71	9.41	5.26	6.07	6.79	7.59	8.32	8.98
TFE	9	6.99	8.07	9.02	10.09	11.05	11.94	6.85	7.91	8.84	9.89	10.83	11.70	6.53	7.54	8.43	9.43	10.32	11.15
TFE	14	10.68	12.33	13.79	15.42	16.89	18.24	10.45	12.07	13.49	15.08	16.52	17.85	9.97	11.51	12.87	14.39	15.76	17.03
TRAE+	8	6.05	6.99	7.81	8.73	9.57	10.33	5.93	6.85	7.66	8.56	9.38	10.13	5.66	6.54	7.31	8.17	8.95	9.67
TRAE+	12	8.82	10.18	11.39	12.73	13.95	15.06	8.64	9.98	11.15	12.47	13.66	14.76	8.24	9.51	10.64	11.89	13.03	14.07
TRAE+	14	9.85	11.37	12.72	14.22	15.57	16.82	9.64	11.13	12.45	13.91	15.24	16.46	9.20	10.62	11.88	13.28	14.55	15.71
TRAE+	20	14.93	17.24	19.27	21.55	23.61	25.50	14.61	16.87	18.86	21.09	23.10	24.95	13.95	16.11	18.01	20.14	22.06	23.82
TRAE+	30	20.52	23.69	26.49	29.62	32.44	35.04	20.09	23.20	25.94	29.00	31.77	34.31	19.17	22.14	24.75	27.67	30.31	32.74
TRAE	35	27.70	31.99	35.76	39.98	43.80	47.31	27.12	31.32	35.01	39.14	42.88	46.32	25.88	29.88	33.41	37.35	40.92	44.20
TRAE	40	30.22	34.90	39.01	43.62	47.78	51.61	29.58	34.16	38.19	42.70	46.77	50.52	28.23	32.60	36.44	40.75	44.64	48.21
TRAE	50	35.96	41.52	46.42	51.90	56.86	61.41	35.21	40.66	45.46	50.82	55.67	60.13	35.21	40.66	45.46	50.82	55.67	60.13
TJR	9	7.54	8.71	9.73	10.88	11.92	12.88	7.38	8.52	9.53	10.65	11.67	12.60	7.05	8.14	9.10	10.18	11.15	12.04
TJR	12	9.03	10.43	11.66	13.03	14.28	15.42	8.84	10.21	11.41	12.76	13.98	15.10	8.44	9.75	10.90	12.19	13.35	14.42
TER	14	11.29	13.04	14.58	16.30	17.85	19.28	11.05	12.76	14.27	15.95	17.47	18.87	10.56	12.19	13.63	15.24	16.70	18.03
TER	16	13.34	15.40	17.22	19.25	21.09	22.78	13.06	15.08	16.86	18.85	20.65	22.30	12.48	14.41	16.11	18.01	19.73	21.31
TER	21	17.96	20.74	23.19	25.92	28.40	30.67	17.58	20.30	22.70	25.37	27.80	30.02	16.80	19.39	21.68	24.24	26.56	28.69
TER	27	23.09	26.66	29.81	33.33	36.51	39.43	22.60	26.10	29.18	32.62	35.73	38.60	21.59	24.93	27.87	31.16	34.14	36.87
TIR	37	28.22	32.59	36.43	40.73	44.62	48.19	27.62	31.89	35.66	39.87	43.67	47.17	26.39	30.47	34.06	38.08	41.72	45.06
THR	48	35.91	41.47	46.36	51.83	56.78	61.33	35.15	40.59	45.38	50.73	55.58	60.03	33.58	38.77	43.35	48.47	53.09	57.35
THR	60	43.61	50.36	56.30	62.95	68.95	74.48	42.69	49.29	55.11	61.62	67.50	72.91	40.78	47.09	52.64	58.86	64.48	69.64
TMR	60	51.30	59.24	66.23	74.05	81.11	87.61	50.22	57.99	64.83	72.49	79.40	85.77	47.97	55.39	61.93	69.24	75.85	81.92

Note: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 100 Psi pressure drop across the TXV per ARI 750-2001.

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F															
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75	
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71	
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76	
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50	
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70	
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69	

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-502 Balanced Ported Valves (Tons)– HF, TFE, TRAE and T Series (cont.)

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
HF	1/8	0.12	0.14	0.15	0.17	0.19	0.20	0.10	0.11	0.13	0.14	0.15	0.16	0.06	0.07	0.08	0.08	0.09	0.09
HF	1/4	0.23	0.27	0.30	0.33	0.36	0.39	0.18	0.20	0.23	0.25	0.27	0.28	0.12	0.13	0.15	0.16	0.18	0.19
HF	1/2	0.42	0.48	0.54	0.61	0.66	0.72	0.33	0.37	0.41	0.45	0.49	0.52	0.21	0.23	0.26	0.29	0.31	0.33
HF	1	0.64	0.74	0.83	0.92	1.01	1.09	0.50	0.56	0.63	0.68	0.74	0.79	0.32	0.36	0.40	0.44	0.47	0.51
HF	1-1/4	0.86	0.99	1.11	1.24	1.36	1.47	0.68	0.76	0.85	0.93	1.01	1.08	0.43	0.48	0.54	0.59	0.64	0.68
HF	1-1/2	1.10	1.27	1.42	1.59	1.74	1.88	0.87	0.97	1.09	1.19	1.29	1.38	0.55	0.61	0.69	0.75	0.81	0.87
HF	2	1.46	1.69	1.88	2.11	2.31	2.49	1.15	1.29	1.44	1.57	1.70	1.82	0.73	0.82	0.91	1.00	1.08	1.15
HF	3-1/2	2.59	2.99	3.34	3.74	4.10	4.42	1.65	1.84	2.06	2.26	2.44	2.61	1.30	1.45	1.63	1.78	1.92	2.06
HF	5	3.60	4.16	4.65	5.20	5.69	6.15	2.84	3.18	3.55	3.89	4.20	4.49	1.81	2.02	2.26	2.48	2.68	2.86
HF	7	4.56	5.27	5.89	6.58	7.21	7.79	3.60	4.02	4.50	4.93	5.32	5.69	2.29	2.56	2.86	3.14	3.39	3.62
HF	10	6.76	7.81	8.73	9.76	10.69	11.54	5.34	5.97	6.68	7.31	7.90	8.44	3.40	3.80	4.25	4.66	5.03	5.38
HF	13	8.90	10.28	11.49	12.85	14.07	15.20	7.03	7.86	8.79	9.63	10.40	11.12	4.48	5.01	5.60	6.13	6.63	7.08
TFE	5	3.54	4.09	4.57	5.11	5.60	6.05	2.79	3.12	3.49	3.82	4.13	4.41	1.78	1.99	2.23	2.44	2.63	2.81
TFE	7	4.84	5.59	6.25	6.99	7.65	8.27	3.82	4.27	4.78	5.23	5.65	6.04	2.43	2.72	3.04	3.33	3.59	3.84
TFE	9	6.01	6.94	7.76	8.67	9.50	10.26	4.75	5.31	5.94	6.50	7.03	7.51	3.02	3.38	3.78	4.14	4.47	4.78
TFE	14	9.18	10.60	11.85	13.25	14.51	15.68	7.25	8.11	9.06	9.93	10.72	11.46	4.61	5.15	5.76	6.31	6.82	7.29
TRAE+	8	5.20	6.00	6.71	7.51	8.22	8.88	4.11	4.60	5.14	5.63	6.08	6.50	2.62	2.93	3.28	3.59	3.88	4.14
TRAE+	12	7.58	8.75	9.79	10.94	11.99	12.95	5.99	6.70	7.49	8.20	8.86	9.47	3.81	4.26	4.76	5.22	5.64	6.02
TRAE+	14	8.47	9.78	10.93	12.23	13.39	14.47	6.69	7.48	8.36	9.16	9.89	10.58	4.26	4.76	5.33	5.83	6.30	6.74
TRAE+	20	12.83	14.81	16.56	18.52	20.29	21.91	10.13	11.33	12.66	13.87	14.98	16.02	6.45	7.21	8.06	8.83	9.54	10.20
TRAE+	30	17.64	20.37	22.77	25.46	27.89	30.13	13.93	15.57	17.41	19.07	20.60	22.03	8.87	9.92	11.09	12.15	13.12	14.02
TRAE	35	23.81	27.49	30.74	34.37	37.65	40.66	18.80	21.02	23.50	25.74	27.81	29.73	11.97	13.38	14.96	16.39	17.70	18.93
TRAE	40	25.97	29.99	33.53	37.48	41.06	44.35	20.51	22.93	25.64	28.08	30.33	32.43	13.06	14.60	16.33	17.88	19.32	20.65
TRAE	50	30.91	35.69	39.90	44.61	48.87	52.79	24.41	27.29	30.51	33.42	36.10	38.60	15.54	17.37	19.43	21.28	22.98	24.57
TJR	9	6.70	7.74	8.65	9.67	10.59	11.44	7.31	8.17	9.14	10.01	10.81	11.56	6.89	7.70	8.61	9.43	10.19	11.56
TJR	12	8.02	9.26	10.36	11.58	12.68	13.70	8.75	9.78	10.94	11.98	12.94	13.84	8.25	9.22	10.31	11.29	12.20	13.84
TER	14	10.03	11.58	12.95	14.48	15.86	17.13	10.95	12.24	13.68	14.99	16.19	17.31	10.31	11.53	12.89	14.12	15.26	17.31
TER	16	11.85	13.59	15.30	17.11	18.74	20.24	12.93	14.46	16.16	17.71	19.13	20.45	12.19	13.63	15.23	16.69	18.02	20.45
TER	21	15.96	18.43	20.60	23.03	25.23	27.26	17.14	19.47	21.76	23.84	25.75	27.53	16.41	18.35	20.51	22.47	24.27	27.53
TER	27	20.51	23.69	26.48	29.61	32.44	35.04	22.38	25.02	27.98	30.65	33.10	35.39	21.09	23.58	26.37	28.88	31.20	35.39
TIR	37	25.07	28.95	32.37	36.19	39.64	42.82	27.35	30.58	34.19	37.45	40.45	43.25	25.78	28.82	32.22	35.30	38.12	43.25
THR	48	31.90	36.84	41.19	46.05	50.44	54.49	34.81	38.92	43.51	47.66	51.48	55.04	32.80	36.67	41.00	44.92	48.52	55.04
THR	60	38.74	44.74	50.02	55.92	61.26	66.71	42.27	47.26	52.84	57.88	62.52	66.84	39.84	44.54	49.79	54.55	58.92	66.84
TMR	60	45.58	52.63	58.84	65.79	72.07	77.84	49.73	55.60	62.84	68.09	73.55	78.62	46.86	52.39	58.58	64.17	69.31	78.62

Refrigerant Liquid Temperature Valve Capacity Multiplier Correction Factors

	Refrigerant Liquid Temperature °F														
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140
R-12 Correction Factor	1.60	1.54	1.48	1.42	1.36	1.30	1.24	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.75
R-134a Correction Factor	1.70	1.63	1.56	1.49	1.42	1.36	1.29	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.71
R-22 Correction Factor	1.56	1.51	1.45	1.40	1.34	1.29	1.23	1.17	1.12	1.06	1.00	0.94	0.88	0.82	0.76
R-404A/R-507 Correction Factor	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.30	1.20	1.10	1.00	0.90	0.80	0.70	0.50
R-450A/R-513A Correction Factor	1.73	1.65	1.58	1.51	1.44	1.36	1.29	1.22	1.15	1.07	1.00	0.93	0.85	0.78	0.70
R-448A/R-449A Correction Factor	1.71	1.64	1.57	1.50	1.43	1.36	1.29	1.22	1.15	1.07	1.00	0.92	0.85	0.77	0.69

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-410A Balance Ported Valves (Tons) - TFE Series

Valve Type	Nominal Rating	Evaporator Temperature																				
		50 °F							40 °F							20 °F						
		Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)						
		75	110	140	160	210	240	285	75	110	140	160	210	240	285	75	110	140	160	210	240	285
TFES	12	8.1	9.9	11.1	11.9	13.6	14.6	15.9	8.1	9.8	11.0	11.8	13.5	14.5	15.7	7.9	9.6	10.8	11.5	13.2	14.1	15.4
	16	12.4	15.0	16.9	18.1	20.7	22.1	24.1	12.3	14.8	16.7	17.9	20.5	21.9	23.9	12.0	14.5	16.4	17.5	20.1	21.5	23.4
	20	13.3	16.1	18.2	19.5	22.3	23.8	26.0	13.2	16.0	18.1	19.3	22.1	23.6	25.8	12.9	15.7	17.7	18.9	21.6	23.1	25.2
Valve Type	Nominal Rating	Evaporator Temperature																				
		0 °F							-20 °F							-40 °F						
		Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)							Pressure Drop Across Valve (PSI)						
		75	110	140	160	210	240	285	75	110	140	160	210	240	285	75	110	140	160	210	240	285
TFES	12	7.7	9.3	10.5	11.2	12.9	13.8	15.0	7.5	9.0	10.2	10.9	12.5	13.3	14.5	7.2	8.7	9.8	10.5	12.0	12.9	14.0
	16	11.7	14.1	16.0	17.1	19.5	20.9	22.8	11.3	13.7	15.5	16.5	18.9	20.2	22.1	10.9	13.2	14.9	15.9	18.3	19.5	21.3
	20	12.6	15.2	17.2	18.4	21.1	22.5	24.5	12.2	14.8	16.7	17.8	20.4	21.8	23.8	11.8	14.3	16.1	17.2	19.7	21.1	22.9

Note: Standard capacity is rated at 100 °F liquid inlet and 40 °F evap temperature; with 160 Psi pressure drop across TXV per ARI 750-2001. These ratings assume vapor free liquid entering the thermal expansion valve.

Refrigerant Liquid Temperature Correction Factors

	Refrigerant Liquid Temperature °F									
	50	60	70	80	90	100	110	120	130	140
R-410A Correction Factor	1.37	1.30	1.23	1.15	1.08	1.00	0.92	0.84	0.75	0.65

These factors include corrections for liquid refrigerant density and net refrigeration effect and are based on an average evaporator temperature of 40 °F with maximum 7 °F change in superheat. However, they may be used for any evaporator temperature from -40 °F to +40 °F; since the variation in the actual factors across this range is insignificant.

EX2 – Pulse Modulated Electric Valve

The EX2 is an electrically driven expansion valve designed for use with R-12, R-22, R-134a, R-404A, R-407C, and R-502.

Features

- Pulse width modulation provides precise temperature control
- Dampened plunger reduces noise and effects of “water hammer”
- Shut off function eliminates the necessity of a separate solenoid valve

Options

- One valve body can be combined with 6 orifices to make 6 capacity ranges up to 2.7 tons R-22.



Specifications

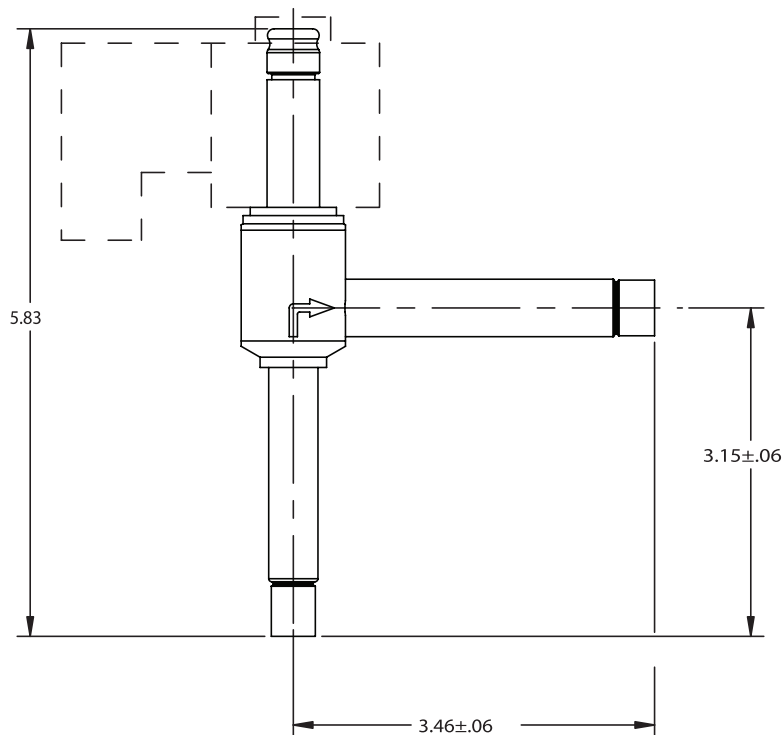
- Designed for 15 year life or 80 million cycles at 15 sec. duty cycle
- Maximum Working Pressure: 400 psig MOPD, 500 psig
- ASC2X Coils: 24V/60Hz, 120V/60Hz
- UL/CUL file number: MP604

NOTE: This valve requires a ASC2X type coil assembly. ASC2X type coil requires cable assembly PCN:059261.

Nomenclature example: EX2 1/4 x 3/8 EXO-001 ASC2X 120V

EX2	1/4	3/8	EXO-001	ASC2X 120V
Valve Series	Inlet Connection	Outlet Connection	Orifice	Coil

Dimensional Data



EX2 – Pulse Modulated Electric

Ordering Information

Device	Description	PCN
Electronic Expansion Valve	EX2 3/8 x 1/2	064497
24V/60Hz Coil	ASC2X 24/60	064503
120V/60Hz Coil	ASC2X 120/60	064504

Standard Product Offering

The liquid capacity table below quotes capacities at 100% duty cycle (i.e. the valve is open continuously). However, it is recommended to operate the valve at partial load (50-80%) to allow for system load fluctuations. The valve operates with a 6 second pulse width cycle. Partial capacity can be calculated by proportioning the actual pulse time relative to 6 seconds (i.e. 3 second pulse width cycle time = 50% valve capacity).

Liquid Capacity Table in Tons @ 100% Duty Cycle

PCN	Orifice #	R-134a Tons (kW)	R-22 Tons (kW)	R-404A / R-507 Tons (kW)	R-407C Tons (kW)	R-744 Tons (kW)
064570	EXO-00X	0.2 (0.7)	0.2 (0.9)	0.17 (0.6)	0.28 (1.0)	0.51 (1.8)
064569	EXO-000	0.3 (1.2)	0.4 (1.6)	0.3 (1.1)	0.48 (1.7)	0.94 (3.3)
064499	EXO-001	0.7 (2.5)	0.9 (3.2)	0.65 (2.3)	1.0 (3.5)	1.85 (6.5)
064500	EXO-002	0.9 (3.3)	1.2 (4.3)	0.85 (3.0)	1.34 (4.7)	2.47 (8.7)
064501	EXO-003	1.6 (5.6)	2.0 (7.2)	1.45 (5.1)	2.22 (7.8)	4.15 (14.6)
064502	EXO-004	2.4 (8.5)	3.1 (10.9)	2.19 (7.7)	3.36 (11.8)	6.31 (22.2)
064497	No Orifice Used	3.7 (13.3)	4.8 (17.2)	3.44 (12.1)	5.32 (18.7)	9.95 (35.0)

Nominal capacities shown in this table are based on 40°F evaporating temperature, 100°F condensing temperature and 100 psig pressure drop across the valve.

Standard Product Offering

EX3 Electronic Expansion Valve

The Emerson EX3 is an electronically controlled expansion device that provides precise control of refrigerant flow and system superheat. The EX3 employs a high resolution, linear stepper motor in conjunction with a built in solenoid to provide positive closure in the event of power interruption. This automatic “shut-off” capability, combined with a take-a-part construction and water resistant design, make the EX3 a robust solution for many applications including supermarket cases and walk-ins.

Features

- Positive shut-off, no need for a battery
- IP67 Moisture Protection - Operates in humid, icy, and wet environments
- Superior control resolution for high efficiency (stepper motor driven)
- Very long life, High reliability
- Take-apart construction for easy field serviceability
 - Cleanable/removable strainer
 - Field exchangeable pin and orifice
- 1 valve assembly with 8 field serviceable pin/orifice combinations for flexible capacity

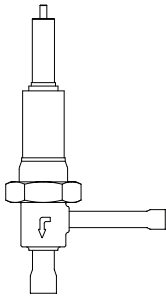
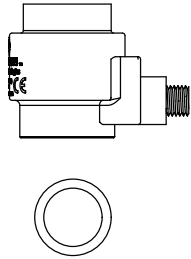
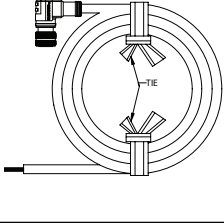
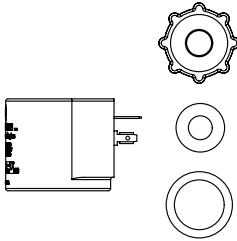
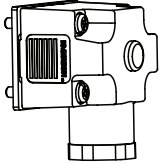
Key Specifications

- MWP: 500psig
- MOPD: 360psig (Uni-flow)
- IP67 (with proper plugs)
- Working Temperature: -58~167°F (liquid)
- Seat leakage: 16 SCCM
- Integral solenoid coil with three voltage options: 230VAC/ 120VAC/ 24VAC
- Certification: UL/CE



Ordering Information

The EX3 offers several different exchangeable components to maximize flexibility

Step 1	Step 2	Step 3	Step 4	Step 5
Sizing Valve Assembly	Order Stator	Select Stator Plug with Lead Wire	Select Solenoid Coil	Order Coil Connector
				
Valve assembly with different pin and orifice sizes (capacity)	Stepper motor, with O-ring	M12 stator plug with lead wires	Solenoid coil with O-rings and screw cap	Connector for reliable IP67 seal
Options: EX3-2000 ~ EX3-5000 EX3-6000 ~ EX3-9000	Options: EX3-S012	Options: EX3-M300: 3 meters EX3-M600: 6 meters	Options: EX3-C230: 220-230VAC EX3-C120: 110-120VAC EX3-C024: 24VAC	Options: EX3-PL67

EX3 Electronic Expansion Valve

Ordering Example

Step 1: Sizing the Valve

Nominal cooling capacity: Tons

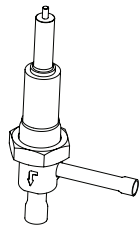
	EX3-2000	EX3-3000	EX3-4000	EX3-5000	EX3-6000	EX3-7000	EX3-8000	EX3-9000
R-404A	0.25	0.53	0.86	1.39	2.25	2.85	3.17	4.06
R-134a	0.29	0.60	0.97	1.57	2.54	3.22	3.59	4.59
R-22	0.40	0.84	1.34	2.18	3.53	4.47	4.98	6.36
R-407F	0.38	0.79	1.27	2.06	3.34	4.23	4.71	6.02
R-507	0.25	0.52	0.83	1.35	2.18	2.77	3.08	3.94

The nominal capacity is based upon the following standard conditions per ARI:

Evaporating Temperature	Condensing Temperature
40°F(4.4°C)	100°F(38°C)

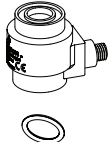
Select the appropriate valve

PCN	Model	Description
098252	EX3-2000	Valve assembly with Pin #2, Orifice #1
098253	EX3-3000	Valve assembly with Pin #3, Orifice #1
098254	EX3-4000	Valve assembly with Pin #4, Orifice #1
098255	EX3-5000	Valve assembly with Pin #5, Orifice #1
098256	EX3-6000	Valve assembly with Pin #6, Orifice #2
098257	EX3-7000	Valve assembly with Pin #7, Orifice #2
098258	EX3-8000	Valve assembly with Pin #8, Orifice #2
098259	EX3-9000	Valve assembly with Pin #9, Orifice #2



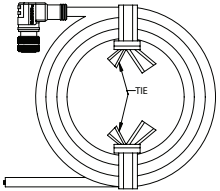
Step 2: Order Stepper Motor

PCN	Model	Description
098263	EX3-S012	1pc Stepper motor stator 1pc O-ring (Ø23.4mm)



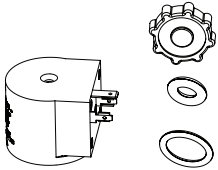
Step 3: Choose A Cable

PCN	Model	Description
098250	EX3-M300	M12 plug to stator (3M Length)
098251	EX3-M600	M12 plug to stator (6M Length)



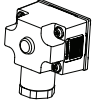
Step 4: Choose Solenoid Coil

PCN	Model	Description
098260	EX3-C230	Solenoid Coil, 220-230VAC 50/60Hz, 1pc Screw-cap, 1pc O-ring (Ø10.5mm) 1pc O-ring (Ø23.4mm)
098261	EX3-C120	Solenoid Coil, 110-120VAC 50/60Hz, 1pc Screw-cap, 1pc O-ring (Ø10.5mm) 1pc O-ring (Ø23.4mm)
098262	EX3-C024	Solenoid Coil, 24VAC 50/60Hz, 1pc Screw-cap, 1pc O-ring (Ø10.5mm) 1pc O-ring (Ø23.4mm)



Step 5: Choose plug to solenoid coil

PCN	Model	Description
098276	EX3-PL67	Connector (Solenoid), IP67



Note:

1. It is strongly recommended to use EX3-PL67 for reliable IP67 class protection.
2. Please use OD 7.0mm wiring for solenoid coil.

Standard Product Offering

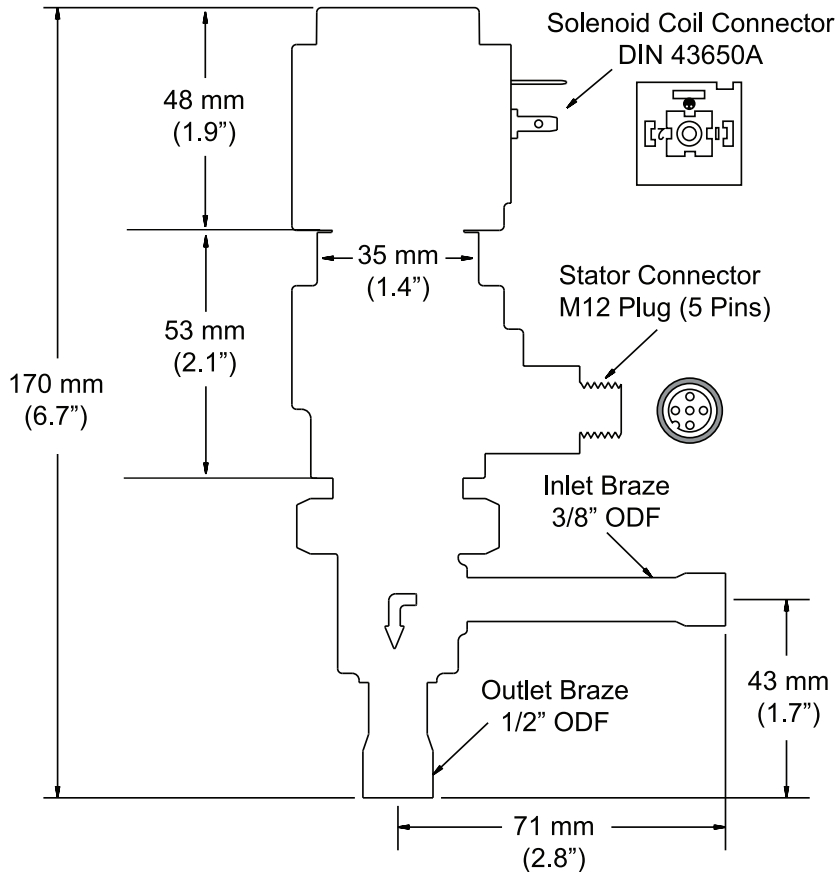
EX3 Electronic Expansion Valve

Replacement Components

Item	Strainer Kit		Pin Assembly Kit		Orifice Kit		Seal Assembly Kit		O-ring (Body)	
PCN(Description)	098264		098265(Pin#2) 098266(Pin#3) 098267(Pin#4) 098268(Pin#5) 098269(Pin#6) 098270(Pin#7) 098271(Pin#8) 098272(Pin#9)		098273(Orifice#1) 098274(Orifice#2)		098277		098275	
Visual										
Components	O-ring: Ø26.7mm	1pc	O-ring: Ø26.7mm	1pc	O-ring: Ø26.7mm	1pc	O-ring: Ø10.5mm	1pc	O-ring: Ø26.7mm	5pcs
	Strainer	1pc	Pin	1pc	Orifice	1pc	Screw cap	1pc	-	-
	Strainer Cover	1pc	Snap-ring	2pcs	-	-	O-ring: Ø23.4mm	2pcs	-	-

Standard Product Offering

Dimensional Data



EX4-EX8 Electrical Control Valve

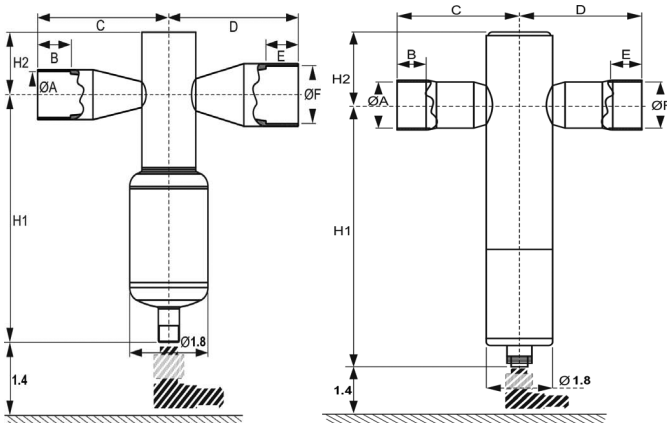
The EX4-EX8 are stepper motor driven valves that are optimized for the control of liquid or gaseous mass flow in refrigeration systems. Multifunction capability as expansion valve, hot gas bypass, suction gas throttling, head pressure, liquid line actuator and other applications systems.

Features

- Fully hermetic design
- Fast full stroke time
- Applicable to all common refrigerants (HCFC, HFC), for subcritical CO₂ applications
- High resolution and excellent repeatability
- Bi-flow versions for heat pump applications
- Positive shut-off function to eliminate the use of an additional solenoid valve
- Linear flow capacity
- Wide capacity range (10 - 100%)
- Continuous modulation of mass flow, no stress (liquid hammering) in the refrigeration circuit
- Direct coupling of motor and valve for high reliability (no gear mechanism)
- Ceramic slide and port for accurate flow and minimal wear
- Balanced force design
- Corrosion resistant stainless steel body, and connections

Valve Type	Inlet x Outlet (ODF)	B	C	D	E	H1	H2
EX4-I21	3/8" x 5/8"	0.3	1.8	2.2	0.4	4.4	1.0
EX5-U21	5/8" x 7/8"	0.4	2.2	2.6	0.6	4.4	1.0
EX6-I21	7/8" x 1-1/8"	0.6	2.6	3.0	0.7	4.4	1.0
EX7-I21	1-1/8" x 1-3/8"	0.8	3.1	3.2	0.9	6.2	1.7
EX8-I21	1-5/8" x 1-5/8"	0.8	3.1	3.1	0.8	7.9	2.2

Dimensional Data (in)



Specifications

- CE marking: EX4/EX5: not required
EX6-EX8: required, Cat I, Module A
- MOPD: EX4-EX6: 580 psid
EX7: 507 psid
EX8: 435 psid
- MWP: EX4-EX7: 870 psig
EX8: 650 psig
- Ambient temperature: -40°F to +130°F
- Humidity: 5 to 95% R.H.
- External leakage: ≤ 0.1 oz/yr (R-22)
- Stepper motor type: Bi-polar, phase current by chopper control (constant current)
- Electrical connection: 4 pin terminal via plug
- Driver supply voltage: Recommended: 24 VDC
Range: 18-36 VDC
- Phase current (operating): EX4-EX6: 500 mA max
EX7: 750 mA
EX8: 800 mA
- Holding current: EX4-EX6: 100 mA
EX7: 250 mA
EX8: 500 mA
- Nominal input power per phase: EX4-EX6: 3.5W
EX7-EX8: 5W
- Phase inductance: EX4-EX6: 30 mH ±25%
EX7: 20 mH ±25%
EX8: 22 mH ±25%
- Step mode: 2 phase full step
- Step angle: 1.8° per step ±8%
- Total number of steps: EX4-EX6: 750 full steps
EX7: 1600 full steps
EX8: 2600 full steps
- Stepping rate: 500 Hz
- Winding resistance per phase: EX4-EX6: 13 ohm ±10%
EX7: 8 ohm ±10%
EX8: 6 ohm ±10%
- Full travel time: EX4-EX6: 1.5 seconds
EX7: 3.2 seconds
EX8: 5.2 seconds

EX4-EX8 Electrical Control Valve

EX4/EX5/EX6/EX7/EX8

Nominal capacities as expansion valves and liquid injection valves

Nominal Capacities in Tons (10% - 100%)

Valve Type	R-407C	R-22	R-134a	R-404A	R-410A	R-23	R-124	R-744
EX4	.6 – 5	.6 – 4.7	.3 – 3.6	.3 – 3.3	.6 – 5.5	.6 – 5.1	.3 – 2.6	.9 – 9.5
EX5	1.4 – 15.1	1.4 – 14.2	1.1 – 11.1	1.1 – 10	1.7 – 16.5	1.4 – 15.4	.9 – 8	2.8 – 29
EX6	4.3 – 35.8	4.3 – 34.1	2.8 – 26.4	2.8 – 23.9	4.3 – 39.8	3.7 – 37	2 – 19.1	6.8 – 69.4
EX7	10 – 98.7	10 – 93.8	7.1 – 72.5	7.1 – 65.4	11.4 – 109.5	–	–	19.9 – 190.5
EX8	28.4 – 263	25.6 – 250.2	19.9 – 193.4	17.1 – 174.3	28.4 – 292	–	–	51.2 – 508.7

Note 1: EX Bi-flow versions are not released for use with R-124 and R-23 refrigerants.

Note 2: EX Bi-flow versions have identical capacity in both flow direction.

Refrigerant	Evaporating Temperature	Condensing Temperature	Subcooling
R-22, R-134a, R-404A, R-410A	+40 °F	+100°F	2°F
R-407C	+40°F dew point	+100°F bubble	2°F
R-124	+68°F	+176°F	2°F
R-23	-76°F	-13°F	2°F
R-744	-40°F	14°F	2°F

The nominal capacity is based on the following conditions:

Ordering Information

Description	Type	Inlet Connection (in)	Outlet Connection (in)	Reference #	PCN
EX4 Electrical Control Valve	EX4-I21	3/8	5/8	800615	097719
EX5 Electrical Control Valve	EX5-U21	5/8	7/8	800618	097720
EX6 Electrical Control Valve	EX6-I21	7/8	1 1/8	800620	097721
EX7 Electrical Control Valve	EX7-I21	1 1/8	1 3/8	800624	097722
EX8 Electrical Control Valve	EX8-I21	1 5/8	1 5/8	804631	097723
EX4 Bi-Flow Electrical Control Valve	EX4-U31	5/8	5/8	800617	097756
EX5 Bi-Flow Electrical Control Valve	EX5-U31	7/8	7/8	800619	097729
EX6 Bi-Flow Electrical Control Valve	EX6-I31	1 1/8	1 1/8	800622	097757
EX7 Bi-Flow Electrical Control Valve	EX7-U31	1 3/8	1 3/8	800626	097758
Valve Connector Cable	EXV-M60	N/A	N/A	804665	097741

Standard Product Offering

EXD-U00 Universal Driver Module

The EXD-U00 is a universal driver that enables the operation of Emerson stepper motor driven valves used in applications such as solenoid valves, electronic expansion valves, hot gas bypass or evaporator pressure regulator as capacity control, crankcase pressure regulator, heat reclaim regulator, and liquid level control.

Features

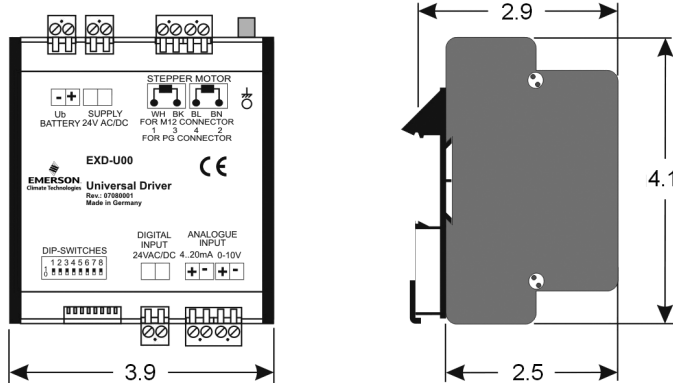
- Valve opening is proportional to 4-20mA or 0-10V analog input signal
- Plug and play, no parameter settings required
- Digital input can be used to force valve closing
- Dip-switches for selection of EX control valve type, analog input and start mode

Ordering Information

Description	Type	Reference #	PCN
Universal Driver Module	EXD-U00	804557	097710
Electrical Terminal Kit	K09-U00	804559	097711

Standard Product Offering

Dimensional Data (in)



Specifications

- Supply voltage: 24V AC $\pm 10\%$, 50-60HZ, 24V DC $\pm 10\%$
- Supply current: To be protected by a 0.8A external fuse
- Power consumption: 10VA in conjunction with EX valve
- Temperature: Storage: -5°F to $+150^{\circ}\text{F}$
Operating: 32°F to $+140^{\circ}\text{F}$
- Humidity: $< 90\%$ R.H. non condensing
- Approvals: EMC EN 61326-1, EN50081, EN50082
- Marking: CE
- Input analogue signal: 4-20 mA
Burden 364Ω
0-10V
Impedence $27K\Omega$
- Digital input: 24V AC $\pm 10\%$, 50-60Hz, 24V DC $\pm 10\%$
- Connection to EX4-8: Via 4 wires cable, maximum 6m length
AWG 20/22
- Connector: Screw terminals for wire size 12/20 AWG
- Mounting: DIN rail mounted
- Housing: Aluminum

EC3-X32 Superheat Controller

The EC3 is a stand-alone universal superheat controller for stable superheat control with stepper motor driven electronic control valves and is used for air conditioning, refrigeration and industrial applications such as chillers, industrial process cooling rooftops, heat pumps, package units, close controls, cold room, food process and air driers. With the EC3-X32, parameters can be downloaded through ECD-002 or through TCP/IP compatible interface.

Features

- Superheat control in conjunction with Emerson stepper motor driven electrical control valves EX4-EX8
- Limitation of evaporating pressure (MOP)
- Low and high superheat alarm
- Low pressure switch function/alarm
- Freeze protection function/alarm
- Pump down function
- Monitoring of sensors and sensor wiring and detection of sensor and wiring failures
- Intelligent alarm management to protect the compressor, i.e fail safe operation
- Integral rechargeable battery to close EX control valves in case of power loss.
- Support of TCP/IP Ethernet technology with WebServer functionality allows monitoring and configuration of controllers through a standard WebBrowser
- Electrical connection via plug-in type screw terminal
- Aluminum housing for DIN rail mounting

Ordering Information

Description	Type	Reference #	PCN
Superheat Controller	EC3-X32	807782	097708
Terminal Kit	K03-X32	807644	097709
Temperature Sensor	ECN-N60	804497	097714
Electrical Control Valve	EX4-EX8**	**	**
Pressure Sensors (R-22/R-124/R-134a/R-404A/R-407C/R507C)	PT5-07M	802350	097748
Pressure Sensor (R-410A)	PT5-18M	802851	097749
Pressure Sensor (R-744)	PT5-30M	802352	097753
Plug and Cable Assembly for Pressure Sensor	PT4-M60	804805	097717
Optional Display/Keypad	ECD-002	807657	097712
Cable Connection between EC3-X32 and ECD-002	ECC-N30 or any standard Cat 5 patch cord with RJ45 connectors	807861	097713
Replacement Battery	EC3	807790	097693

**For further details refer to the EX4-EX8 product page.

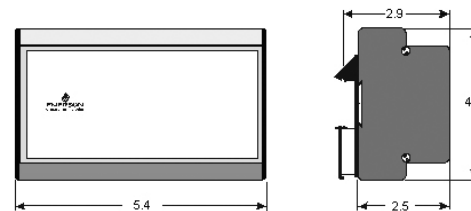
Standard Product Offering



Specifications

- Supply voltage: 24VAC \pm 10%, 50/60 Hz
- Digital input: 24VAC \pm 10%, 50-60 Hz, 24VDC \pm 10%
- Power consumption: 25 VA max. including connected EX valve and display/keyboard
- Internal battery charging time: Approx. 2 hours if battery is fully empty
- Plug-in connector size: Removable screw version, wire size 12-20 AWG
- Ground connection: 1/4 in. spade earth connector
- Applied directive: EMC, LVD, RoHS (EN 61326, EN 50081, EN 61000-6-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN61000-4-5, EN 61000-4-6, EN 61000-4-11)
- Marking: CE
- Temperatures: Storage, -5°F, to +150°F
Operating, 32°F, to +140°F
- Humidity: 0 – 80% R.H. non condensing

Dimensional Data



EC3-X33 Superheat Controller

The EC3 is a stand-alone universal superheat controller for stable superheat control with stepper motor driven electronic control valves and is used for air conditioning, refrigeration and industrial applications such as chillers, industrial process cooling rooftops, heat pumps, package units, close controls, cold room, food process and air driers. The EC3-X33 requires the use of the ECD-002 display key pad unit for setting up the controller.

Features

- Superheat control in conjunction with Emerson stepper motor driven electrical control valves EX4-EX8
- Limitation of evaporating pressure (MOP)
- Low and high superheat alarm
- Monitoring of sensors and sensor wiring and detection of sensor and wiring failures
- Intelligent alarm management to protect the compressor, i.e fail safe operation
- Integral rechargeable battery to close EX control valves in case of power loss.
- Electrical connection via plug-in type screw terminal
- Aluminum housing for DIN rail mounting

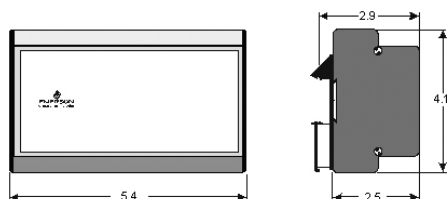
Ordering Information

Description	Type	Reference #	PCN
Superheat Controller	EC3-X33	807783	097707
Temperature Sensor	ECN-N60	804497	097714
Electrical Control Valve	EX4-EX8**	**	**
Pressure Sensors (R-22/R-124/R-134a/R-404A/R-407C/R507C)	PT5-07M	802350	097748
Pressure Sensor (R-410A)	PT5-18M	802851	097749
Pressure Sensor (R-744)	PT5-30M	802352	097753
Plug and Cable Assembly for Pressure Sensor	PT4-M60	804805	097717
Optional Display/Keypad	ECD-002	807657	097712
Cable Connection between EC3-X33 and ECD-002	ECC-N30 or any standard Cat 5 patch cord with RJ45 connectors	807861	097713
Replacement Battery	EC3	807790	097693

**For further details refer to the EX4-EX8 product page.

Standard Product Offering

Dimensional Data



Specifications

- Supply Voltage: 24VAC \pm 10%, 50/60 Hz
- Digital Input: 24VAC \pm 10%, 50-60 Hz, 24VDC \pm 10%
- Power Consumption: 25 VA max. including connected EX valve and display/keyboard
- Internal battery charging time: Approx. 2 hours if battery is fully empty
- Plug-in connector size: Removable screw version wire size 12-20 AWG
- Ground connection: 1.4 in. spade earth connector
- Applied Directive: EMC, LVD, RoHS
EN 61326, EN 50081, EN 61000-6-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN61000-4-5, EN 61000-4-6, EN 61000-4-11)
- Marking: CE
- Temperatures: Storage: -5°F to +150°F
Operating: 32°F to +140°F
- Humidity: 0 – 80% R.H. non condensing

EC3-D72 Digital Superheat Controller

For stable superheat control with EX4...EX6 electrical control valves and automatic synchronization of the PWM capacity control valve incorporated into the Copeland Scroll Digital™ compressor technology

Features

- Limitation of evaporating pressure (MOP)
- Feed-through of 4 ... 20mA signal of evaporating pressure transmitter to operate third party controllers with a common pressure transmitter
- Intelligent alarm management, superheat alarm
- Monitoring of sensors and sensor wiring, detection of sensor and wiring failures
- Integral rechargeable battery to close Electrical Control Valve in case of power loss
- Electrical connection via plug-in type screw terminals
- Aluminum housing for DIN rail mounting
- Synchronization of the PWM solenoid valve used for variable capacity control of the Copeland Scroll Digital

Additional features

EC3-X32 and EC3-D72 with TCP/IP

- WebServer functionality allows monitoring and configuration of controllers through a standard WebBrowser (e.g. Internet Explorer®)
- Internal data logging and alarm messaging by email
- Multiple language support (EmersonClimate.com)
- Freeze protection
- Low and high superheat alarm
- Low pressure switch function/Alarm

Ordering Information

Description	TCP/IP		
	Type	Reference #	PCN
Digital Superheat Controller (TCP/IP)	EC3-D72	807805	097733
Terminal Kit for EC3-D72/-D73	K03-331	807648	097734
Replacement Battery for EC3		807790	097693



Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

ECD-002 Display Unit

The ECD-002 is a display/keypad unit necessary for setting up controllers.

Features

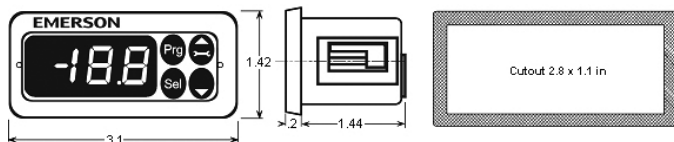
- Front panel mounted interface for parameter and status read-out and for controller setup via keypad
- Indicator LEDs for valve opening/closing, demand and alarm

Ordering Information

Description	Device	Reference #	PCN
Optional Display/Keypad	ECD-002	807657	097712
Cable Connection between EC3-X33 and ECD-002	ECC-N30 or any standard Cat 5 patch cord with RJ45 connectors	807861	097713

Standard Product Offering

Dimensional Data



Specifications

- Supply: From EC3 Series controller via connecting cable
- LED indicators: Valve opening, valve closing, alarm, demand
- Display LED: Segmented display, 2-1/2 digits with automatic decimal point between ± 19.9 , switchable between $^{\circ}\text{C}$ and $^{\circ}\text{F}$
- Connecting cable: ECC-N30 or standard CAT5 patch cord with RJ45 connectors
- Temperatures: Storage, -5°F to $+150^{\circ}\text{F}$
Operating, 32°F to $+140^{\circ}\text{F}$
- Humidity: 0 - 80% R.H. non condensing
- Mounting: Panel mount (2.8 x 1.1 inch cutout)

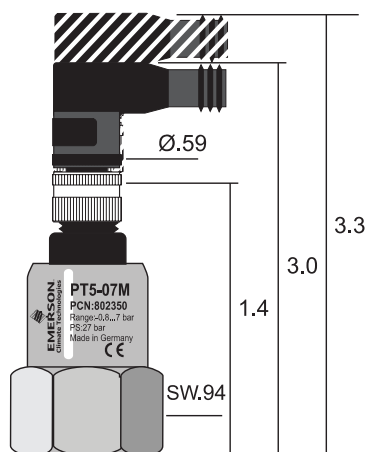
Pressure Transmitters

The Pressure Transmitters convert a pressure into a linear electric output signal. At the heart of the transmitter there is a piezo resistive chip enclosed in an oil capsule.

Features

- Pressure sensitive piezo-based cell with strong primary output signal for precise operation
- Compact dimensions
- Vibration, shock and pulsation resistant
- Reduced full scale error over complete temperature range
- Sealed gauge absolute pressure reference for increased accuracy independent of atmospheric pressure variation
- Output signal is 4 to 20 mA
- Calibrated for specific temperature and pressure ranges to fulfill application demands in air conditioning and refrigeration systems
- Easy-to-install M12 electrical connection with pre-assembled cable assembly
- Pressure connector 7/16-20 UNF with Schrader valve

Dimensional Data (in)



Specifications

- Supply voltage: Nominal 24 VDC
Range (polarity protected) 7 – 30 VDC
- Permissible noise & ripple: < 1 V_p
- Influence of supply voltage: < 0.02 % FS/V
- Operating current: 4 to 20 mA output, Max. ≤ 24 mA
- Load resistance: RL ≤ Ub-8.0V 0.02A
- Mounting position: Non-position sensitive
- Response time: <5 ms
- Temperatures: Ambient: -40°F to +176°F
Medium: -58°F to +212°F
Storage: -40°F to +185°F
- Sensor Life: ≥10,000,000 cycles full stroke at 77°F
- Burst Pressure: -07M = 2,176 psi
-18M and -30M = 3,626 psi
- Electrical connection: PT4-M60
- Approvals: CE marking according to PED, not allowed (SEP)
CE marking according to EMC, CE marked
- Medium compatibility: HFC, HCFC, CFC (not suitable for ammonia and flammable refrigerants!)
- Vibration at 10 – 2000 Hz: Max. 4 g
- Materials: Stainless steel housing, pressure connector and diaphragm in contact with sensed medium
- Pressure Range: PT5 - 07M 12 - 102 psi
PT5 - 18M 0 - 261 psi
PT5 - 30M 0 - 435 psi

Ordering Information

Description	Type	Refrigerant	Pressure Range	Reference #	PCN
Pressure Transmitter	PT5-07M	R22, R134A, R507, R404A, R407C, R124	22" Hg - 100 psi	802350	097748
Pressure Transmitter	PT5-18M	R410	0-261psi	802351	097749
Pressure Transmitter	PT5-30M	R744	0-435psi	802334	097753
Plug/Cable Assemblies	PT4-M60			804805	097717

Standard Product Offering

XEV Kit

The Emerson XEV kit includes a combination of commonly needed components for field installation of an energy efficient, electronic expansion valve solution. The kit includes the Emerson EX series valve, XEV controller, pressure transducer, temperature sensor, transformer, and all associated cables, all in one box.

Features

- Applicable to multiple refrigerants, including R-404A, R-507, R-407A, R-22, R-134a, R-410A and subcritical CO₂
- Several kit offerings for a wide range of valve capacities
- Specific kit instructions included for faster installation
- XEV-EX48 controller is pre-programmed for use with the included components, allowing for easy setup
- An RS485 serial link allows the XEV-EX48 controller to connect (via Modbus®) to monitoring systems, including Emerson's E2 system controller
- Controller kit also available that includes all control components without the EXV solution



Ordering Information

PCN	Description	Includes
Individual Controller		<ul style="list-style-type: none"> • XEV EX48 controller* • XEV electrical connectors
900001	XEV EX48	
Complete Kits		<ul style="list-style-type: none"> • XEV EX48 controller* • XEV electrical connectors • EX valve (4,5,6,7,8) • EXV-M60 valve cable • PT5-18M pressure transducer • PT4-M60 transducer cable • ECN-N60 temperature sensor • 90-T40F3 24V transformer, 40VA 60HZ 120/208/240V
900004	XEV EX4 KIT	
900005	XEV EX5 KIT	
900006	XEV EX6 KIT	
900007	XEV EX7 KIT	
900008	XEV EX8 KIT	
Complete Kit Less Valve		Complete kit components listed above, without a valve
900003	XEV Kit Less Valve	
Refrigerants		
R-404A, R-507, R-407A, R-22, R-134a, R-410A, CO ₂ subcritical		

*The XEV-EX48 superheat controller comes pre-set to specifically work with all other Emerson components listed above.

R-12 Extended Capacities (Tons) - EX2 Series

Capacities are for EX2 @ 100% duty cycle

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX2-00X	0.23	0.14	0.27	0.30	0.33	0.36	0.39	0.14	0.16	0.18	0.20	0.22	0.24	0.13	0.15	0.17	0.19	0.21	0.22
EX2-000	0.4	0.24	0.46	0.52	0.58	0.63	0.68	0.24	0.28	0.31	0.35	0.38	0.41	0.23	0.27	0.30	0.33	0.36	0.39
EX2-001	0.81	0.49	0.94	1.05	1.17	1.28	1.38	0.48	0.55	0.62	0.69	0.75	0.82	0.46	0.53	0.59	0.66	0.73	0.79
EX2-002	1.1	0.67	1.27	1.42	1.59	1.74	1.88	0.65	0.75	0.84	0.94	1.03	1.11	0.63	0.73	0.81	0.91	1.00	1.08
EX2-003	2.0	1.21	2.31	2.58	2.89	3.16	3.42	1.19	1.37	1.54	1.72	1.88	2.03	1.14	1.32	4.71	1.65	1.80	1.95
EX2-004	2.7	1.63	3.12	3.49	3.90	4.27	4.61	1.60	1.85	2.07	2.31	2.53	2.73	1.54	1.78	1.99	2.22	2.43	2.63
EX2-M00	4.3	2.60	4.97	5.55	6.21	6.80	7.34	2.55	2.94	3.29	3.68	4.03	4.35	2.45	2.83	3.16	3.54	3.87	4.18

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX2-00X	0.23	0.13	0.27	0.30	0.33	0.36	0.39	0.14	0.16	0.18	0.20	0.22	0.24	0.11	0.13	0.14	0.16	0.17	0.19
EX2-000	0.4	0.22	0.46	0.52	0.58	0.63	0.68	0.24	0.28	0.31	0.35	0.38	0.41	0.20	0.23	0.26	0.29	0.32	0.34
EX2-001	0.81	0.44	0.34	1.05	1.17	1.28	1.38	0.48	0.55	0.62	0.69	0.75	0.82	0.40	0.46	0.52	0.58	0.63	0.68
EX2-002	1.1	0.60	1.27	1.42	1.59	1.74	1.88	0.66	0.76	0.85	0.95	1.04	1.13	0.54	0.62	0.70	0.78	0.85	0.92
EX2-003	2.0	1.09	2.31	2.58	2.89	3.16	3.42	1.20	1.39	1.55	1.73	1.90	2.05	0.98	1.13	1.27	1.41	1.55	1.67
EX2-004	2.7	1.47	3.12	3.49	3.90	4.27	4.61	1.40	1.62	1.81	2.02	2.21	2.39	1.33	1.54	1.72	1.92	2.10	2.27
EX2-M00	4.3	2.34	4.97	5.55	6.21	6.80	7.34	2.57	2.97	3.32	3.71	4.06	4.39	2.12	2.45	2.74	3.08	3.35	3.62

R-22 Extended Capacities (Tons) - EX2 Series

Capacities are for EX2 @ 100% duty cycle

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX2-00X	0.23	0.18	0.21	0.23	0.26	0.28	0.31	0.18	0.21	0.23	0.26	0.28	0.31	0.17	0.20	0.22	0.25	0.27	0.29
EX2-000	0.4	0.31	0.36	0.40	0.45	0.49	0.53	0.31	0.36	0.40	0.45	0.49	0.53	0.30	0.35	0.39	0.43	0.47	0.51
EX2-001	0.81	0.64	0.74	0.83	0.92	1.01	1.09	0.63	0.73	0.81	0.91	1.00	1.08	0.61	0.70	0.79	0.88	0.96	1.04
EX2-002	1.1	0.86	0.99	1.11	1.24	1.36	1.47	0.85	0.98	1.10	1.23	1.34	1.45	0.83	0.96	1.07	1.20	1.31	1.42
EX2-003	2.0	1.57	1.81	2.08	2.27	2.48	2.68	1.55	1.79	2.00	2.21	2.45	2.65	1.51	1.74	1.95	2.18	2.39	2.58
EX2-004	2.7	2.12	2.45	2.74	3.06	3.35	3.62	2.10	2.42	2.71	3.03	3.32	3.59	2.04	2.36	2.63	2.94	3.23	3.48
EX2-M00	4.3	3.38	3.90	4.36	4.88	5.34	5.77	3.34	3.86	4.31	4.82	5.28	5.70	3.25	3.75	4.20	4.69	5.14	5.55

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX2-00X	0.23	0.17	0.20	0.22	0.25	0.27	0.29	0.19	0.21	0.24	0.26	0.28	0.30	0.18	0.20	0.23	0.25	0.27	0.28
EX2-000	0.4	0.29	0.33	0.37	0.42	0.46	0.50	0.33	0.37	0.41	0.45	0.49	0.52	0.32	0.36	0.40	0.44	0.47	0.51
EX2-001	0.81	0.60	0.69	0.77	0.87	0.95	1.02	0.67	0.75	0.84	0.92	0.99	1.06	0.64	0.72	0.80	0.88	0.95	1.01
EX2-002	1.1	0.81	0.94	1.05	1.17	1.28	1.38	0.90	1.01	1.13	1.23	1.33	1.42	0.87	0.97	1.09	1.19	1.29	1.38
EX2-003	2.0	1.47	1.70	1.90	2.12	2.32	2.51	1.64	1.83	2.05	2.25	2.43	2.59	1.59	1.78	1.99	2.18	2.35	2.51
EX2-004	2.7	1.99	2.30	2.57	2.87	3.15	3.40	2.22	2.48	2.78	3.04	3.28	3.51	2.14	2.39	2.68	2.93	3.17	3.38
EX2-M00	4.3	3.16	3.65	4.08	4.56	5.00	5.40	3.54	3.96	4.43	4.85	5.24	5.60	3.42	3.82	4.28	4.68	5.06	5.41

R-134a Extended Capacities (Tons) - EX2 Series

Capacities are for EX2 @ 100% duty cycle

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX2-00X	0.23	0.17	0.20	0.22	0.25	0.27	0.29	0.17	0.20	0.22	0.25	0.27	0.29	0.16	0.18	0.21	0.23	0.25	0.27
EX2-000	0.4	0.30	0.35	0.39	0.43	0.47	0.51	0.23	0.33	0.37	0.42	0.46	0.50	0.28	0.32	0.36	0.40	0.44	0.48
EX2-001	0.81	0.61	0.70	0.79	0.88	0.96	1.04	0.59	0.68	0.79	0.85	0.93	1.01	0.57	0.66	0.74	0.82	0.90	0.97
EX2-002	1.1	0.82	0.95	1.06	1.18	1.30	1.40	0.81	0.94	1.05	1.17	1.28	1.38	0.77	0.89	0.99	1.11	1.22	1.32
EX2-003	2.0	1.56	1.79	2.00	2.24	2.45	2.65	1.52	1.75	1.96	2.19	2.40	2.60	1.47	1.70	1.90	2.12	2.32	2.51
EX2-004	2.7	2.02	2.33	2.61	2.92	3.19	3.45	1.98	2.29	2.56	2.86	3.13	3.38	1.90	2.19	2.45	2.74	3.00	3.24
EX2-M00	4.3	3.22	3.72	4.16	4.65	5.09	5.50	3.16	3.65	4.08	4.56	5.00	5.40	3.02	3.49	3.90	4.36	4.78	5.16

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX2-00X	0.23	0.15	0.17	0.19	0.22	0.24	0.26	0.17	0.19	0.21	0.23	0.25	0.27	0.16	0.18	0.20	0.22	0.24	0.25
EX2-000	0.4	0.27	0.31	0.35	0.39	0.43	0.46	0.29	0.32	0.38	0.40	0.43	0.46	0.28	0.31	0.35	0.38	0.41	0.44
EX2-001	0.81	0.54	0.62	0.70	0.78	0.85	0.92	0.59	0.66	0.74	0.81	0.87	0.93	0.56	0.63	0.70	0.77	0.83	0.89
EX2-002	1.1	0.74	0.85	0.96	1.07	1.17	1.26	0.81	0.91	1.01	1.11	1.20	1.28	0.76	0.85	0.95	1.04	1.12	1.20
EX2-003	2.0	1.41	1.63	1.82	2.04	2.23	2.41	1.56	1.74	1.95	2.14	2.31	2.47	1.49	1.67	1.86	2.04	2.20	2.36
EX2-004	2.7	1.81	2.09	2.34	2.61	2.86	3.09	1.98	2.21	2.48	2.71	2.93	3.13	1.88	2.10	2.35	2.57	2.78	2.97
EX2-M00	4.3	2.88	3.33	3.72	4.16	4.55	4.92	3.16	3.53	3.95	4.33	4.67	5.00	2.99	3.34	3.74	4.09	4.42	4.73

R-404A/R-507 Extended Capacities (Tons) - EX2 Series

Capacities are for EX2 @ 100% duty cycle

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX2-00X	0.23	0.13	0.15	0.17	0.19	0.21	0.22	0.13	0.15	0.17	0.19	0.21	0.22	0.12	0.14	0.15	0.17	0.19	0.20
EX2-000	0.4	0.23	0.27	0.30	0.33	0.36	0.39	0.22	0.25	0.28	0.32	0.35	0.38	0.21	0.24	0.27	0.30	0.33	0.36
EX2-001	0.81	0.47	0.54	0.61	0.68	0.74	0.80	0.46	0.53	0.59	0.66	0.73	0.79	0.43	0.50	0.56	0.62	0.68	0.73
EX2-002	1.1	0.63	0.73	0.81	0.91	1.00	1.08	0.52	0.72	0.80	0.89	0.98	1.06	0.59	0.68	0.76	0.85	0.93	1.01
EX2-003	2.0	1.15	1.33	1.48	1.66	1.82	1.96	1.12	1.29	1.45	1.62	1.77	1.91	1.07	1.24	1.38	1.54	1.69	1.83
EX2-004	2.7	1.55	1.79	2.00	2.24	2.45	2.65	1.52	1.76	1.96	2.19	2.40	2.60	1.44	1.66	1.86	2.08	2.28	2.46
EX2-M00	4.3	2.47	2.85	3.19	3.57	3.91	4.22	2.42	2.79	3.12	3.49	3.83	4.13	2.30	2.66	2.97	3.32	3.64	3.93

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX2-00X	0.23	0.12	0.14	0.15	0.17	0.19	0.20	0.13	0.35	0.16	0.18	0.19	0.21	0.12	0.13	0.15	0.16	0.18	0.19
EX2-000	0.4	0.20	0.23	0.26	0.29	0.32	0.34	0.22	0.25	0.28	0.30	0.33	0.35	0.20	0.22	0.25	0.27	0.30	0.32
EX2-001	0.81	0.41	0.47	0.53	0.59	0.65	0.70	0.44	0.49	0.55	0.60	0.65	0.70	0.41	0.46	0.51	0.56	0.61	0.65
EX2-002	1.1	0.55	0.64	0.71	0.79	0.87	0.94	0.60	0.67	0.75	0.82	0.89	0.95	0.56	0.63	0.70	0.77	0.83	0.89
EX2-003	2.0	1.01	1.17	1.30	1.46	1.60	1.72	1.09	1.22	1.36	1.49	1.61	1.72	1.02	1.14	1.28	1.40	1.51	1.61
EX2-004	2.7	1.38	1.57	1.76	1.96	2.15	2.32	1.48	1.65	1.85	2.03	2.19	2.34	1.38	1.54	1.73	1.89	2.04	2.18
EX2-M00	4.3	2.17	2.51	2.80	3.13	3.43	3.71	2.35	2.63	2.94	3.22	3.48	3.72	2.19	2.45	2.74	3.00	3.24	3.46

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

R-407C Extended Capacities (Tons) - EX2 Series

Capacities are for EX2 @ 100% duty cycle

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX2-00X	0.23	0.17	0.20	0.22	0.25	0.27	0.29	0.17	0.20	0.22	0.25	0.27	0.29	0.16	0.18	0.21	0.23	0.25	0.27
EX2-000	0.4	0.30	0.35	0.39	0.43	0.47	0.51	0.30	0.35	0.39	0.43	0.47	0.51	0.28	0.32	0.36	0.40	0.44	0.48
EX2-001	0.81	0.61	0.70	0.79	0.88	0.96	1.04	0.50	0.69	0.77	0.87	0.95	1.02	0.58	0.67	0.75	0.84	0.92	0.99
EX2-002	1.1	0.83	0.96	1.07	1.20	1.31	1.42	0.81	0.94	1.05	1.17	1.28	1.38	0.78	0.90	1.01	1.13	1.23	1.33
EX2-003	2.0	1.51	1.74	1.95	2.18	2.39	2.58	1.48	1.71	1.91	2.14	2.34	2.53	1.42	1.64	1.83	2.05	2.25	2.43
EX2-004	2.7	2.04	2.36	2.63	2.94	3.23	3.48	2.00	2.31	2.58	2.89	3.16	3.42	1.92	2.22	2.48	2.77	3.14	3.28
EX2-M00	4.3	3.24	3.74	4.18	4.68	5.12	5.53	3.18	3.67	4.11	4.59	5.03	5.43	3.06	3.53	3.95	4.42	4.84	5.23

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX2-00X	0.23	0.16	0.18	0.21	0.23	0.25	0.27	0.17	0.19	0.21	0.23	0.25	0.27	0.16	0.18	0.20	0.22	0.24	0.25
EX2-000	0.4	0.27	0.31	0.35	0.39	0.43	0.46	0.30	0.34	0.38	0.41	0.44	0.47	0.28	0.31	0.35	0.38	0.41	0.44
EX2-001	0.81	0.55	0.64	0.71	0.79	0.87	0.94	0.60	0.67	0.75	0.82	0.89	0.95	0.57	0.64	0.71	0.78	0.84	0.90
EX2-002	1.1	0.75	0.87	0.97	1.08	1.19	1.28	0.82	0.92	1.03	1.12	1.21	1.30	0.78	0.87	0.98	1.07	1.15	1.23
EX2-003	2.0	1.36	1.57	1.76	1.96	2.15	2.32	1.49	1.67	1.86	2.04	2.20	2.36	1.42	1.59	1.78	1.94	2.10	2.25
EX2-004	2.7	1.83	2.11	2.36	2.64	2.89	3.13	2.02	2.26	2.53	2.77	2.99	3.19	1.91	2.14	2.39	2.62	2.82	3.02
EX2-M00	4.3	2.92	3.37	3.77	4.21	4.82	4.99	3.21	3.59	4.01	4.40	4.75	5.08	3.05	3.41	3.81	4.18	4.51	4.82

R-502 Extended Capacities (Tons) - EX2 Series

Capacities are for EX2 @ 100% duty cycle

Valve Type	Nominal Rating	Evaporator Temperature																	
		50°F						40°F						20°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX2-000	0.4	0.21	0.24	0.27	0.30	0.33	0.36	0.20	0.23	0.26	0.29	0.32	0.34	0.19	0.22	0.25	0.27	0.30	0.32
EX2-001	0.81	0.42	0.48	0.54	0.61	0.66	0.72	0.41	0.47	0.53	0.59	0.65	0.70	0.39	0.46	0.50	0.56	0.62	0.67
EX2-002	1.1	0.56	0.65	0.72	0.81	0.89	0.96	0.55	0.64	0.71	0.79	0.87	0.94	0.53	0.61	0.68	0.75	0.84	0.91
EX2-003	2.0	1.03	1.19	1.33	1.49	1.63	1.76	1.00	1.15	1.29	1.44	1.58	1.71	0.96	1.11	1.24	1.39	1.52	1.64
EX2-004	2.7	1.39	1.61	1.79	2.01	2.20	2.37	1.36	1.57	1.76	1.96	2.15	2.32	1.29	1.49	1.67	1.86	2.04	2.20
EX2-M00	4.3	2.21	2.55	2.85	3.19	3.49	3.77	2.16	2.49	2.79	3.12	3.42	3.69	2.06	2.38	2.66	2.97	3.28	3.52

Valve Type	Nominal Rating	Evaporator Temperature																	
		0°F						-20°F						-40°F					
		Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
		60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX2-000	0.4	0.18	0.21	0.23	0.26	0.28	0.31	0.20	0.22	0.25	0.27	0.30	0.32	0.19	0.21	0.24	0.26	0.28	0.30
EX2-001	0.81	0.37	0.43	0.48	0.53	0.59	0.63	0.40	0.45	0.50	0.55	0.59	0.63	0.38	0.42	0.48	0.52	0.56	0.60
EX2-002	1.1	0.50	0.58	0.65	0.72	0.79	0.85	0.55	0.61	0.69	0.75	0.81	0.87	0.51	0.57	0.64	0.70	0.75	0.81
EX2-003	2.0	0.91	1.05	1.17	1.31	1.44	1.55	0.99	1.11	1.24	1.36	1.46	1.57	0.93	1.04	1.16	1.27	1.38	1.47
EX2-004	2.7	1.23	1.42	1.59	1.78	1.94	2.10	1.34	1.50	1.66	1.83	1.98	2.12	1.26	1.41	1.58	1.73	1.86	1.99
EX2-M00	4.3	1.96	2.26	2.53	2.83	3.10	3.35	2.13	2.38	2.56	2.92	3.15	3.37	2.00	2.24	2.50	2.74	2.96	3.16

R-22 Extended Capacities (Tons) - EX3 Series

Valve Type	Evaporator Temperature																	
	50°F						40°F						20°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX3-2000	0.32	0.36	0.41	0.46	0.50	0.54	0.31	0.36	0.40	0.45	0.49	0.53	0.30	0.35	0.39	0.44	0.48	0.52
EX3-3000	0.66	0.76	0.85	0.95	1.04	1.13	0.65	0.75	0.84	0.94	1.03	1.12	0.64	0.73	0.82	0.92	1.01	1.09
EX3-4000	1.06	1.23	1.37	1.54	1.68	1.82	1.05	1.21	1.36	1.52	1.66	1.80	1.02	1.18	1.32	1.48	1.62	1.75
EX3-5000	1.72	1.99	2.23	2.49	2.73	2.95	1.70	1.97	2.20	2.46	2.69	2.91	1.66	1.92	2.14	2.40	2.62	2.84
EX3-6000	2.79	3.22	3.60	4.02	4.41	4.76	2.76	3.18	3.56	3.98	4.36	4.71	2.68	3.10	3.47	3.87	4.24	4.58
EX3-7000	3.53	4.08	4.56	5.10	5.59	6.04	3.49	4.03	4.51	5.04	5.52	5.96	3.40	3.93	4.39	4.91	5.38	5.81
EX3-8000	3.94	4.55	5.08	5.68	6.23	6.72	3.89	4.49	5.02	5.62	6.15	6.64	3.79	4.38	4.89	5.47	5.99	6.47
EX3-9000	5.03	5.81	6.49	7.26	7.95	8.59	4.97	5.74	6.42	7.17	7.86	8.49	4.84	5.59	6.25	6.99	7.65	8.27

Valve Type	Evaporator Temperature																	
	0°F						-20°F						-40°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX3-2000	0.29	0.34	0.38	0.43	0.47	0.50	0.33	0.37	0.41	0.45	0.49	0.52	0.32	0.36	0.40	0.44	0.47	0.50
EX3-3000	0.62	0.71	0.80	0.89	0.98	1.05	0.69	0.77	0.86	0.95	1.02	1.09	0.67	0.75	0.83	0.91	0.99	1.05
EX3-4000	0.99	1.15	1.28	1.44	1.57	1.70	1.11	1.24	1.39	1.52	1.64	1.76	1.07	1.20	1.34	1.47	1.59	1.70
EX3-5000	1.61	1.86	2.08	2.33	2.55	2.75	1.80	2.01	2.25	2.47	2.67	2.85	1.74	1.95	2.17	2.38	2.57	2.75
EX3-6000	2.61	3.01	3.36	3.76	4.12	4.45	2.91	3.26	3.64	3.99	4.31	4.61	2.81	3.15	3.52	3.85	4.16	4.45
EX3-7000	3.30	3.81	4.27	4.77	5.22	5.64	3.69	4.13	4.62	5.06	5.46	5.84	3.57	3.99	4.46	4.88	5.27	5.64
EX3-8000	3.68	4.25	4.75	5.31	5.82	6.29	4.11	4.60	5.14	5.63	6.09	6.51	3.97	4.44	4.97	5.44	5.88	6.28
EX3-9000	4.70	5.43	6.07	6.78	7.43	8.03	5.26	5.88	6.57	7.20	7.77	8.31	5.07	5.67	6.34	6.95	7.50	8.02

Refrigerant Liquid Correction Factor																
Liquid Line Temp, °F	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
Capacity Multiplier (R-22)	1.54	1.49	1.43	1.38	1.33	1.27	1.22	1.17	1.11	1.06	1.00	0.94	0.89	0.83	0.77	
Capacity Multiplier (R-134a)	1.64	1.58	1.51	1.45	1.39	1.32	1.26	1.19	1.13	1.07	1.00	0.93	0.87	0.80	0.73	
Capacity Multiplier (R-404A)	1.92	1.83	1.74	1.65	1.56	1.47	1.38	1.29	1.19	1.10	1.00	0.90	0.80	0.69	0.58	
Capacity Multiplier (R-407F)	1.68	1.62	1.55	1.48	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.70	
Capacity Multiplier (R-507)	1.87	1.78	1.70	1.61	1.53	1.44	1.36	1.27	1.18	1.09	1.00	0.91	0.81	0.71	0.60	

R-134a Extended Capacities (Tons) - EX3 Series

Valve Type	Evaporator Temperature																	
	50°F						40°F						20°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX3-2000	0.30	0.34	0.38	0.43	0.47	0.51	0.29	0.34	0.38	0.42	0.46	0.50	0.28	0.32	0.36	0.40	0.44	0.47
EX3-3000	0.62	0.72	0.80	0.90	0.98	1.06	0.61	0.70	0.78	0.88	0.96	1.04	0.58	0.67	0.75	0.84	0.92	0.99
EX3-4000	1.00	1.15	1.29	1.44	1.58	1.71	0.98	1.13	1.26	1.41	1.55	1.67	0.93	1.08	1.21	1.35	1.48	1.60
EX3-5000	1.62	1.87	2.09	2.34	2.56	2.77	1.59	1.83	2.05	2.29	2.51	2.71	1.52	1.75	1.96	2.19	2.40	2.59
EX3-6000	2.62	3.02	3.38	3.78	4.14	4.47	2.56	2.96	3.31	3.70	4.06	4.38	2.45	2.83	3.17	3.54	3.88	4.19
EX3-7000	3.32	3.83	4.29	4.79	5.25	5.67	3.25	3.75	4.20	4.69	5.14	5.55	3.11	3.59	4.01	4.49	4.92	5.31
EX3-8000	3.70	4.27	4.78	5.34	5.85	6.32	3.62	4.18	4.68	5.23	5.73	6.19	3.46	4.00	4.47	5.00	5.48	5.91
EX3-9000	4.73	5.46	6.10	6.82	7.47	8.07	4.63	5.34	5.97	6.68	7.32	7.90	4.42	5.11	5.71	6.39	7.00	7.56

Valve Type	Evaporator Temperature																	
	0°F						-20°F						-40°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX3-2000	0.26	0.31	0.34	0.38	0.42	0.45	0.29	0.32	0.36	0.40	0.43	0.46	0.27	0.31	0.34	0.38	0.41	0.43
EX3-3000	0.55	0.64	0.71	0.80	0.87	0.94	0.61	0.68	0.76	0.83	0.90	0.96	0.57	0.64	0.72	0.78	0.85	0.91
EX3-4000	0.89	1.03	1.15	1.28	1.41	1.52	0.98	1.09	1.22	1.34	1.44	1.54	0.92	1.03	1.15	1.26	1.36	1.46
EX3-5000	1.45	1.67	1.87	2.09	2.29	2.47	1.58	1.77	1.98	2.17	2.34	2.50	1.50	1.67	1.87	2.05	2.21	2.37
EX3-6000	2.34	2.70	3.01	3.37	3.69	3.99	2.56	2.86	3.20	3.50	3.78	4.05	2.42	2.70	3.02	3.31	3.58	3.82
EX3-7000	2.96	3.42	3.82	4.27	4.68	5.06	3.24	3.63	4.05	4.44	4.80	5.13	3.07	3.43	3.83	4.20	4.53	4.85
EX3-8000	3.30	3.81	4.26	4.76	5.21	5.63	3.61	4.04	4.52	4.95	5.34	5.71	3.42	3.82	4.27	4.68	5.05	5.40
EX3-9000	4.21	4.87	5.44	6.08	6.66	7.20	4.62	5.16	5.77	6.32	6.83	7.30	4.36	4.88	5.45	5.97	6.45	6.90

Refrigerant Liquid Correction Factor																	
Liquid Line Temp, °F	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
Capacity Multiplier (R-22)	1.54	1.49	1.43	1.38	1.33	1.27	1.22	1.17	1.11	1.06	1.00	0.94	0.89	0.83	0.77		
Capacity Multiplier (R-134a)	1.64	1.58	1.51	1.45	1.39	1.32	1.26	1.19	1.13	1.07	1.00	0.93	0.87	0.80	0.73		
Capacity Multiplier (R-404A)	1.92	1.83	1.74	1.65	1.56	1.47	1.38	1.29	1.19	1.10	1.00	0.90	0.80	0.69	0.58		
Capacity Multiplier (R-407F)	1.68	1.62	1.55	1.48	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.70		
Capacity Multiplier (R-507)	1.87	1.78	1.70	1.61	1.53	1.44	1.36	1.27	1.18	1.09	1.00	0.91	0.81	0.71	0.60		

R-404A Extended Capacities (Tons) - EX3 Series

Valve Type	Evaporator Temperature																	
	50°F						40°F						20°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX3-2000	0.20	0.23	0.26	0.29	0.32	0.35	0.20	0.23	0.26	0.29	0.31	0.34	0.19	0.22	0.24	0.27	0.30	0.32
EX3-3000	0.42	0.49	0.55	0.61	0.67	0.72	0.41	0.48	0.53	0.60	0.65	0.71	0.39	0.45	0.51	0.57	0.62	0.67
EX3-4000	0.68	0.79	0.88	0.98	1.08	1.16	0.67	0.77	0.86	0.96	1.05	1.14	0.63	0.73	0.82	0.91	1.00	1.08
EX3-5000	1.10	1.28	1.43	1.59	1.75	1.89	1.08	1.25	1.39	1.56	1.71	1.84	1.03	1.18	1.32	1.48	1.62	1.75
EX3-6000	1.79	2.06	2.30	2.58	2.82	3.05	1.74	2.01	2.25	2.52	2.76	2.98	1.66	1.91	2.14	2.39	2.62	2.83
EX3-7000	2.26	2.61	2.92	3.27	3.58	3.87	2.21	2.55	2.86	3.19	3.50	3.78	2.10	2.43	2.71	3.03	3.32	3.59
EX3-8000	2.52	2.91	3.25	3.64	3.99	4.31	2.46	2.85	3.18	3.56	3.90	4.21	2.34	2.70	3.02	3.38	3.70	4.00
EX3-9000	3.22	3.72	4.16	4.65	5.09	5.50	3.15	3.63	4.06	4.54	4.98	5.38	2.99	3.45	3.86	4.32	4.73	5.11

Valve Type	Evaporator Temperature																	
	0°F						-20°F						-40°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX3-2000	0.18	0.20	0.23	0.26	0.28	0.30	0.19	0.21	0.24	0.26	0.28	0.30	0.18	0.20	0.22	0.24	0.26	0.28
EX3-3000	0.37	0.43	0.48	0.54	0.59	0.63	0.40	0.45	0.50	0.55	0.59	0.63	0.37	0.42	0.47	0.51	0.55	0.59
EX3-4000	0.60	0.69	0.77	0.86	0.94	1.02	0.65	0.72	0.81	0.88	0.95	1.02	0.60	0.67	0.75	0.82	0.89	0.95
EX3-5000	0.97	1.12	1.25	1.40	1.53	1.65	1.05	1.17	1.31	1.43	1.55	1.65	0.97	1.09	1.22	1.33	1.44	1.54
EX3-6000	1.56	1.81	2.02	2.26	2.47	2.67	1.69	1.89	2.11	2.32	2.50	2.67	1.57	1.76	1.97	2.15	2.33	2.49
EX3-7000	1.98	2.29	2.56	2.86	3.13	3.39	2.14	2.40	2.68	2.94	3.17	3.39	1.99	2.23	2.49	2.73	2.95	3.15
EX3-8000	2.21	2.55	2.85	3.19	3.49	3.77	2.39	2.67	2.99	3.27	3.53	3.78	2.22	2.48	2.78	3.04	3.29	3.51
EX3-9000	2.82	3.26	3.64	4.07	4.46	4.82	3.05	3.41	3.81	4.18	4.51	4.82	2.84	3.17	3.55	3.89	4.20	4.49

Refrigerant Liquid Correction Factor																
Liquid Line Temp, °F	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
Capacity Multiplier (R-22)	1.54	1.49	1.43	1.38	1.33	1.27	1.22	1.17	1.11	1.06	1.00	0.94	0.89	0.83	0.77	
Capacity Multiplier (R-134a)	1.64	1.58	1.51	1.45	1.39	1.32	1.26	1.19	1.13	1.07	1.00	0.93	0.87	0.80	0.73	
Capacity Multiplier (R-404A)	1.92	1.83	1.74	1.65	1.56	1.47	1.38	1.29	1.19	1.10	1.00	0.90	0.80	0.69	0.58	
Capacity Multiplier (R-407F)	1.68	1.62	1.55	1.48	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.70	
Capacity Multiplier (R-507)	1.87	1.78	1.70	1.61	1.53	1.44	1.36	1.27	1.18	1.09	1.00	0.91	0.81	0.71	0.60	

R-407F Extended Capacities (Tons) - EX3 Series

Valve Type	Evaporator Temperature																	
	50°F						40°F						20°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX3-2000	0.30	0.35	0.39	0.43	0.47	0.51	0.30	0.34	0.38	0.43	0.47	0.50	0.29	0.33	0.37	0.41	0.45	0.49
EX3-3000	0.63	0.72	0.81	0.90	0.99	1.07	0.62	0.71	0.80	0.89	0.98	1.05	0.60	0.69	0.77	0.86	0.95	1.02
EX3-4000	1.01	1.16	1.30	1.45	1.59	1.72	0.99	1.15	1.28	1.43	1.57	1.70	0.96	1.11	1.24	1.39	1.52	1.64
EX3-5000	1.63	1.89	2.11	2.36	2.58	2.79	1.61	1.86	2.08	2.32	2.55	2.75	1.56	1.80	2.01	2.25	2.47	2.66
EX3-6000	2.64	3.05	3.41	3.81	4.18	4.51	2.60	3.01	3.36	3.76	4.12	4.45	2.52	2.91	3.26	3.64	3.99	4.31
EX3-7000	3.35	3.87	4.32	4.84	5.30	5.72	3.30	3.81	4.26	4.77	5.22	5.64	3.20	3.69	4.13	4.62	5.06	5.46
EX3-8000	3.73	4.31	4.82	5.39	5.90	6.37	3.68	4.25	4.75	5.31	5.82	6.28	3.56	4.11	4.60	5.14	5.63	6.08
EX3-9000	4.77	5.50	6.15	6.88	7.54	8.14	4.70	5.43	6.07	6.78	7.43	8.03	4.55	5.25	5.87	6.57	7.19	7.77

Valve Type	Evaporator Temperature																	
	0°F						-20°F						-40°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX3-2000	0.28	0.32	0.36	0.40	0.44	0.47	0.31	0.34	0.38	0.42	0.45	0.48	0.29	0.33	0.37	0.40	0.43	0.46
EX3-3000	0.58	0.67	0.74	0.83	0.91	0.98	0.64	0.71	0.80	0.87	0.94	1.01	0.61	0.68	0.76	0.84	0.90	0.97
EX3-4000	0.93	1.07	1.20	1.34	1.47	1.58	1.03	1.15	1.28	1.41	1.52	1.62	0.98	1.10	1.23	1.35	1.45	1.55
EX3-5000	1.50	1.74	1.94	2.17	2.38	2.57	1.67	1.86	2.08	2.28	2.46	2.63	1.59	1.78	1.99	2.18	2.36	2.52
EX3-6000	2.43	2.81	3.14	3.51	3.84	4.15	2.70	3.01	3.37	3.69	3.99	4.26	2.58	2.88	3.22	3.53	3.81	4.08
EX3-7000	3.08	3.56	3.98	4.45	4.87	5.26	3.42	3.82	4.27	4.68	5.05	5.40	3.27	3.65	4.08	4.47	4.83	5.17
EX3-8000	3.43	3.96	4.43	4.95	5.43	5.86	3.81	4.25	4.76	5.21	5.63	6.02	3.64	4.07	4.55	4.98	5.38	5.75
EX3-9000	4.39	5.06	5.66	6.33	6.93	7.49	4.86	5.44	6.08	6.66	7.19	7.69	4.65	5.20	5.81	6.37	6.88	7.35

Refrigerant Liquid Correction Factor																	
Liquid Line Temp, °F	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
Capacity Multiplier (R-22)	1.54	1.49	1.43	1.38	1.33	1.27	1.22	1.17	1.11	1.06	1.00	0.94	0.89	0.83	0.77		
Capacity Multiplier (R-134a)	1.64	1.58	1.51	1.45	1.39	1.32	1.26	1.19	1.13	1.07	1.00	0.93	0.87	0.80	0.73		
Capacity Multiplier (R-404A)	1.92	1.83	1.74	1.65	1.56	1.47	1.38	1.29	1.19	1.10	1.00	0.90	0.80	0.69	0.58		
Capacity Multiplier (R-407F)	1.68	1.62	1.55	1.48	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.70		
Capacity Multiplier (R-507)	1.87	1.78	1.70	1.61	1.53	1.44	1.36	1.27	1.18	1.09	1.00	0.91	0.81	0.71	0.60		

R-507 Extended Capacities (Tons) - EX3 Series

Valve Type	Evaporator Temperature																	
	50°F						40°F						20°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	60	80	100	125	150	175	60	80	100	125	150	175
EX3-2000	0.20	0.23	0.26	0.29	0.31	0.34	0.19	0.22	0.25	0.28	0.31	0.33	0.18	0.21	0.24	0.26	0.29	0.31
EX3-3000	0.41	0.48	0.53	0.60	0.65	0.71	0.40	0.47	0.52	0.58	0.64	0.69	0.38	0.44	0.50	0.55	0.61	0.66
EX3-4000	0.67	0.77	0.86	0.96	1.05	1.14	0.65	0.75	0.84	0.94	1.03	1.11	0.62	0.71	0.80	0.89	0.98	1.06
EX3-5000	1.08	1.25	1.39	1.56	1.71	1.84	1.06	1.22	1.36	1.52	1.67	1.80	1.00	1.16	1.29	1.45	1.58	1.71
EX3-6000	1.75	2.02	2.25	2.52	2.76	2.98	1.71	1.97	2.20	2.46	2.70	2.91	1.62	1.87	2.09	2.34	2.56	2.77
EX3-7000	2.22	2.56	2.86	3.20	3.50	3.78	2.16	2.50	2.79	3.12	3.42	3.70	2.05	2.37	2.65	2.96	3.25	3.51
EX3-8000	2.47	2.85	3.19	3.56	3.90	4.21	2.41	2.78	3.11	3.48	3.81	4.12	2.29	2.64	2.95	3.30	3.62	3.91
EX3-9000	3.15	3.64	4.07	4.55	4.98	5.38	3.08	3.56	3.98	4.45	4.87	5.26	2.92	3.38	3.77	4.22	4.62	4.99

Valve Type	Evaporator Temperature																	
	0°F						-20°F						-40°F					
	Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)						Pressure Drop Across Valve (PSI)					
	60	80	100	125	150	175	80	100	125	150	175	200	80	100	125	150	175	200
EX3-2000	0.17	0.20	0.22	0.25	0.27	0.29	0.19	0.21	0.23	0.26	0.28	0.29	0.17	0.19	0.22	0.24	0.26	0.27
EX3-3000	0.36	0.42	0.47	0.52	0.57	0.62	0.39	0.44	0.49	0.53	0.58	0.62	0.36	0.40	0.45	0.50	0.54	0.57
EX3-4000	0.58	0.67	0.75	0.84	0.92	0.99	0.63	0.70	0.79	0.86	0.93	0.99	0.58	0.65	0.73	0.80	0.86	0.92
EX3-5000	0.94	1.09	1.22	1.36	1.49	1.61	1.02	1.14	1.27	1.39	1.51	1.61	0.95	1.06	1.18	1.29	1.40	1.49
EX3-6000	1.53	1.76	1.97	2.20	2.41	2.61	1.65	1.84	2.06	2.26	2.44	2.60	1.53	1.71	1.91	2.09	2.26	2.42
EX3-7000	1.93	2.23	2.50	2.79	3.06	3.30	2.09	2.34	2.61	2.86	3.09	3.30	1.94	2.17	2.42	2.66	2.87	3.07
EX3-8000	2.16	2.49	2.78	3.11	3.41	3.68	2.33	2.60	2.91	3.19	3.44	3.68	2.16	2.42	2.70	2.96	3.19	3.42
EX3-9000	2.75	3.18	3.55	3.97	4.35	4.70	2.97	3.32	3.72	4.07	4.40	4.70	2.76	3.09	3.45	3.78	4.08	4.36

Refrigerant Liquid Correction Factor																	
Liquid Line Temp, °F	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		
Capacity Multiplier (R-22)	1.54	1.49	1.43	1.38	1.33	1.27	1.22	1.17	1.11	1.06	1.00	0.94	0.89	0.83	0.77		
Capacity Multiplier (R-134a)	1.64	1.58	1.51	1.45	1.39	1.32	1.26	1.19	1.13	1.07	1.00	0.93	0.87	0.80	0.73		
Capacity Multiplier (R-404A)	1.92	1.83	1.74	1.65	1.56	1.47	1.38	1.29	1.19	1.10	1.00	0.90	0.80	0.69	0.58		
Capacity Multiplier (R-407F)	1.68	1.62	1.55	1.48	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.85	0.78	0.70		
Capacity Multiplier (R-507)	1.87	1.78	1.70	1.61	1.53	1.44	1.36	1.27	1.18	1.09	1.00	0.91	0.81	0.71	0.60		

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R-410A Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)											
		60	50	40	30	20	10	0	-10	-20	-30	-40	-50
EX4	140	5	5	5	5	5	5	5	5	5	5	5	5
EX5		15	15	16	16	16	16	16	16	15	15	15	15
EX6		36	37	38	38	38	38	38	38	37	37	36	35
EX7		99	102	104	105	105	105	105	104	103	101	99	97
EX8		265	271	277	279	281	281	280	277	274	269	264	258
EX4	130	5	5	5	5	6	6	6	6	5	5	5	5
EX5		15	16	16	16	17	17	17	17	16	16	16	16
EX6		37	38	39	40	40	40	40	40	40	39	39	38
EX7		101	105	107	109	110	110	111	110	109	108	106	104
EX8		269	279	285	292	293	295	296	294	291	288	283	277
EX4	120	5	5	6	6	6	6	6	6	6	6	6	6
EX5		15	16	17	17	17	17	17	17	17	17	17	17
EX6		37	39	40	41	42	42	42	42	42	42	41	40
EX7		101	106	110	112	114	115	116	116	116	114	113	111
EX8		270	283	293	299	305	308	309	310	309	305	301	297
EX4	110	5	5	5	6	6	6	6	6	6	6	6	6
EX5		15	15	16	17	17	17	18	18	18	17	17	17
EX6		35	37	39	40	42	42	43	43	43	42	42	41
EX7		96	102	107	111	114	115	117	118	117	116	115	113
EX8		257	273	286	297	305	308	313	314	313	309	308	303
EX4	100	5	5	5	6	6	6	6	6	6	6	6	6
EX5		14	15	16	17	17	17	18	18	18	18	18	18
EX6		33	36	38	40	41	42	43	43	43	43	43	42
EX7		90	98	105	110	113	116	118	119	119	118	118	116
EX8		240	261	281	294	301	308	315	316	316	315	316	311
EX4	90	4	4	5	5	5	6	6	6	6	6	6	6
EX5		12	13	15	16	16	17	17	18	18	18	18	18
EX6		28	33	36	38	40	41	42	42	43	43	43	43
EX7		78	89	98	104	109	112	116	116	118	118	118	117
EX8		207	239	260	277	290	300	308	311	314	314	315	313
EX4	80	3	4	4	5	5	5	6	6	6	6	6	6
EX5		9	12	13	15	15	16	17	17	17	17	17	17
EX6		22	28	32	35	37	39	40	41	42	42	42	42
EX7		61	77	87	97	103	107	111	113	114	116	115	114
EX8		163	204	233	257	274	286	297	300	305	309	308	305
EX4	70	2	3	4	4	5	5	5	5	6	6	6	6
EX5		5	9	11	13	14	15	16	16	17	17	17	17
EX6		11	21	27	31	34	37	39	39	40	41	41	41
EX7		31	59	75	86	94	101	106	108	111	112	114	113
EX8		84	157	201	230	251	270	284	289	295	300	303	301
EX4	60	-	1	3	4	4	5	5	5	5	5	5	5
EX5		-	4	8	11	13	14	15	15	16	16	16	16
EX6		-	10	20	26	30	33	36	37	38	39	40	39
EX7		-	27	56	72	84	92	98	102	105	108	109	109
EX8		-	72	150	192	224	245	262	273	281	287	291	290
EX4	50	-	-	1	3	3	4	4	5	5	5	5	5
EX5		-	-	3	8	10	12	14	14	15	15	16	16
EX6		-	-	8	19	25	29	33	35	36	37	38	38
EX7		-	-	21	53	69	80	90	95	99	102	104	104
EX8		-	-	57	143	185	214	239	254	265	272	278	277

R-407C Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature Bubble Point (°F)	Evaporating Temperature (°F)							
		60	50	40	30	20	10	0	-10
EX4	140	5	5	5	5	5	5	5	5
EX5		14	15	15	15	15	15	14	14
EX6		34	35	35	35	35	35	34	33
EX7		95	97	97	97	96	95	94	92
EX8		253	257	258	259	256	255	250	244
EX4	130	5	5	5	5	5	5	5	5
EX5		15	15	15	15	15	15	15	14
EX6		35	35	36	36	36	35	35	34
EX7		95	96	98	98	98	97	96	94
EX8		253	257	261	261	261	260	256	252
EX4	120	5	5	5	5	5	5	5	5
EX5		14	15	15	15	15	15	15	15
EX6		34	35	36	36	36	36	36	36
EX7		93	96	99	99	99	100	99	98
EX8		249	256	264	265	265	266	264	261
EX4	110	4	5	5	5	5	5	5	5
EX5		14	14	15	15	15	15	15	15
EX6		33	34	35	35	36	36	36	35
EX7		90	93	96	97	99	99	99	98
EX8		239	248	255	260	263	264	263	260
EX4	100	4	4	5	5	5	5	5	5
EX5		13	14	14	15	15	15	15	15
EX6		30	32	34	35	35	36	36	36
EX7		84	89	94	96	98	9	99	98
EX8		224	239	250	256	260	263	254	262
EX4	90	4	4	4	5	5	5	5	5
EX5		11	13	13	14	14	15	15	15
EX6		27	30	32	33	34	35	35	35
EX7		75	83	87	92	94	96	97	96
EX8		201	220	233	244	250	256	259	257
EX4	80	3	4	4	4	4	5	5	5
EX5		10	11	12	13	13	14	14	14
EX6		23	26	29	31	32	33	34	34
EX7		63	73	80	85	88	91	93	93
EX8		169	193	212	227	235	243	247	248
EX4	70	2	3	4	4	4	4	4	4
EX5		7	9	11	12	13	13	14	14
EX6		17	22	26	28	30	31	32	33
EX7		47	61	71	77	83	87	89	90
EX8		125	164	190	206	220	231	236	239
EX4	60	0	2	3	3	4	4	4	4
EX5		2	7	9	10	11	12	13	13
EX6		4	16	21	24	27	29	30	31
EX7		10	43	58	67	74	79	82	85
EX8		26	115	154	179	197	211	219	225
EX4	50	-	-	2	3	3	4	4	4
EX5		-	-	6	8	10	11	12	12
EX6		-	-	15	20	23	26	27	29
EX7		-	-	40	55	64	70	75	79
EX8		--	-	107	146	170	187	201	210

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R-22 Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)											
		60	50	40	30	20	10	0	-10	-20	-30	-40	-50
EX4	140	5	5	5	5	5	5	5	5	5	5	5	5
EX5		15	15	15	16	16	16	16	15	15	15	15	15
EX6		35	36	37	37	38	38	37	37	37	36	36	35
EX7		97	100	101	102	103	104	103	102	102	100	98	96
EX8		260	266	270	273	275	276	272	271	266	262	262	257
EX4	130	5	5	5	5	5	5	5	5	5	5	5	5
EX5		14	15	15	15	16	16	16	15	15	15	15	15
EX6		34	35	36	37	37	37	37	37	37	37	36	36
EX7		94	97	100	101	102	103	102	102	101	101	99	98
EX8		251	258	266	270	273	274	273	273	270	268	264	260
EX4	120	4	5	5	5	5	5	5	5	5	5	5	5
EX5		14	14	15	15	15	15	16	15	15	15	15	15
EX6		33	34	35	36	37	37	37	37	37	37	37	36
EX7		90	94	97	99	100	102	103	102	102	101	100	99
EX8		240	250	259	264	268	272	274	272	271	270	268	263
EX4	110	4	4	5	5	5	5	5	5	5	5	5	5
EX5		12	13	14	14	15	15	15	15	15	15	15	15
EX6		30	32	34	34	35	36	36	36	37	36	36	36
EX7		82	88	92	95	98	99	100	100	101	99	99	98
EX8		219	234	246	253	260	263	266	266	268	265	263	261
EX4	100	4	4	4	5	5	5	5	5	5	5	5	5
EX5		11	12	13	14	14	15	15	15	15	15	15	15
EX6		27	29	31	33	34	35	35	36	36	36	35	35
EX7		74	81	87	91	93	96	97	98	98	98	98	97
EX8		197	216	231	242	249	256	259	263	263	262	260	258
EX4	90	3	4	4	4	4	5	5	5	5	5	5	5
EX5		9	11	12	13	13	14	14	14	14	14	14	14
EX6		22	26	29	31	32	33	34	34	35	35	35	34
EX7		61	71	78	84	87	91	93	94	95	95	95	94
EX8		163	190	209	224	233	242	249	251	255	254	253	251
EX4	80	2	3	3	4	4	4	4	4	5	5	5	5
EX5		7	9	10	11	12	13	13	14	14	14	14	14
EX6		16	21	25	27	29	30	32	33	33	33	33	33
EX7		44	58	68	75	81	84	87	89	90	91	91	91
EX8		117	156	182	201	215	224	233	239	240	243	243	241
EX4	70	-	2	3	3	4	4	4	4	4	4	4	4
EX5		-	6	8	10	11	12	12	13	13	13	13	13
EX6		-	15	20	24	26	28	30	31	31	32	32	32
EX7		-	40	55	65	72	77	81	84	85	87	88	87
EX8		-	108	147	173	191	205	217	224	227	231	234	233
EX4	60	-	-	2	3	3	3	4	4	4	4	4	4
EX5		-	-	6	8	9	10	11	12	12	12	12	12
EX6		-	-	13	19	22	25	27	28	29	29	30	30
EX7		-	-	36	51	61	68	74	76	79	81	82	82
EX8		-	-	97	137	163	182	196	204	211	216	219	219
EX4	50	-	-	-	2	2	3	3	3	4	4	4	4
EX5		-	-	-	5	7	9	10	11	11	11	12	12
EX6		-	-	-	11	17	21	23	25	26	27	28	28
EX7		-	-	-	31	47	57	65	69	73	74	76	77
EX8		-	-	-	83	126	152	172	185	194	199	203	206

R-134a Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)								
		60	50	40	30	20	10	0	-10	-20
EX4	140	4	4	4	4	4	4	4	3	3
EX5		11	11	11	11	11	11	11	11	10
EX6		27	27	27	27	27	26	26	25	25
EX7		74	75	75	75	73	73	71	69	68
EX8		197	200	200	199	196	194	190	185	181
EX4	130	4	4	4	4	4	4	4	4	3
EX5		11	11	11	11	11	11	11	11	10
EX6		26	26	27	27	27	27	26	26	25
EX7		72	73	74	74	73	73	72	70	69
EX8		191	194	198	197	196	194	192	187	183
EX4	120	3	4	4	4	4	4	4	4	4
EX5		10	11	11	11	11	11	11	11	11
EX6		25	26	26	27	27	27	26	26	25
EX7		68	71	73	73	73	73	72	71	70
EX8		182	188	194	196	195	195	193	189	186
EX4	110	3	3	3	4	4	4	4	4	3
EX5		10	10	11	11	11	11	11	11	11
EX6		23	24	25	26	26	26	26	26	25
EX7		63	65	69	70	71	71	71	70	69
EX8		168	176	183	187	189	191	189	188	184
EX4	100	3	3	3	3	3	3	3	3	3
EX5		9	9	10	10	10	11	11	11	10
EX6		20	22	24	24	25	25	25	25	25
EX7		56	60	65	67	69	69	69	69	68
EX8		149	161	173	178	183	184	185	184	182
EX4	90	2	3	3	3	3	3	3	3	3
EX5		7	8	9	9	10	10	10	10	10
EX6		16	19	21	22	23	24	24	24	24
EX7		44	52	58	61	64	66	66	66	66
EX8		118	139	153	163	170	175	177	176	177
EX4	80	1	2	2	3	3	3	3	3	3
EX5		4	6	7	8	9	9	9	10	10
EX6		10	15	18	20	21	22	23	23	23
EX7		27	40	49	54	58	60	62	62	63
EX8		72	107	130	144	154	160	165	166	167
EX4	70	-	1	2	2	3	3	3	3	3
EX5		-	3	6	7	8	8	9	9	9
EX6		-	8	13	16	18	20	21	21	22
EX7		-	22	37	45	50	54	57	59	59
EX8		-	58	98	120	134	145	152	156	158
EX4	60	-	-	1	2	2	2	3	3	3
EX5		-	-	2	5	6	7	8	8	8
EX6		-	-	5	12	15	17	18	19	20
EX7		-	-	14	32	40	46	50	52	53
EX8		-	-	38	84	107	122	133	139	143
EX4	50	-	-	-	-	1	2	2	2	2
EX5		-	-	-	-	4	5	6	7	7
EX6		-	-	-	-	9	13	15	16	17
EX7		-	-	-	-	26	36	42	45	48
EX8		-	-	-	-	69	95	111	120	128

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R-404 A/R-507 Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)											
		60	50	40	30	20	10	0	-10	-20	-30	-40	-50
EX4	130	3	3	3	3	3	3	3	3	3	2	2	2
EX5		9	9	9	9	9	9	8	8	8	8	7	7
EX6		21	21	22	21	21	21	20	20	19	18	17	16
EX7		58	59	59	58	58	57	56	54	52	50	48	45
EX8		153	156	157	156	154	152	148	143	139	133	127	120
EX4	120	3	3	3	3	3	3	3	3	3	3	3	3
EX5		9	9	9	10	9	9	9	9	9	9	8	8
EX6		22	22	23	23	23	23	22	22	21	20	20	19
EX7		59	61	62	63	62	62	61	60	58	56	54	52
EX8		158	162	165	168	166	165	163	169	165	149	144	138
EX4	110	3	3	3	3	3	3	3	3	3	3	3	3
EX5		9	9	10	10	10	10	10	9	9	9	9	8
EX6		21	22	23	23	23	23	23	23	22	22	21	20
EX7		58	60	63	63	64	64	63	62	61	59	58	56
EX8		153	161	167	168	170	171	168	165	163	158	154	148
EX4	100	3	3	3	3	3	3	3	3	3	3	3	3
EX5		8	9	9	10	10	10	10	10	10	10	9	9
EX6		20	21	23	23	24	24	24	24	23	23	22	22
EX7		54	59	62	64	65	66	66	66	64	63	62	59
EX8		145	156	165	171	174	175	176	173	171	168	164	158
EX4	90	2	3	3	3	3	3	3	3	3	3	3	3
EX5		7	8	9	9	10	10	10	10	10	10	10	9
EX6		17	20	21	23	23	24	24	24	24	23	23	23
EX7		48	54	58	62	64	65	66	66	66	64	63	62
EX8		127	144	156	164	170	173	176	176	175	171	169	165
EX4	80	2	2	3	3	3	3	3	3	3	3	3	3
EX5		6	7	8	9	9	10	10	10	10	10	10	9
EX6		13	17	19	21	22	23	23	24	24	23	23	23
EX7		37	46	53	58	61	63	64	65	65	64	63	62
EX8		98	124	142	154	162	168	171	173	172	171	169	166
EX4	70	1	2	2	3	3	3	3	3	3	3	3	3
EX5		2	5	7	8	9	9	9	10	10	10	10	10
EX6		6	13	17	19	21	22	23	23	24	23	23	23
EX7		16	35	46	52	57	60	62	64	64	64	64	63
EX8		42	94	122	138	152	160	166	170	172	170	170	168
EX4	60	-	1	2	2	2	3	3	3	3	3	3	3
EX5		-	2	5	7	8	8	9	9	9	9	9	9
EX6		-	4	12	16	18	20	21	22	22	22	23	22
EX7		-	11	33	43	50	55	58	60	61	62	62	61
EX8		-	30	89	116	133	146	155	159	163	164	165	162
EX4	50	-	-	-	2	2	2	3	3	3	3	3	3
EX5		-	-	-	5	6	7	8	9	9	9	9	9
EX6		-	-	-	11	15	18	19	20	21	21	22	22
EX7		-	-	-	31	42	48	53	56	58	59	60	59
EX8		-	-	-	82	111	128	142	149	154	157	160	158
EX4	40	-	-	-	-	1	2	2	2	3	3	3	3
EX5		-	-	-	-	4	6	7	8	8	8	8	9
EX6		-	-	-	-	10	14	17	18	19	20	20	21
EX7		-	-	-	-	27	38	46	50	53	55	56	56
EX8		-	-	-	-	72	102	122	133	142	146	149	150

R-23 Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)									
		-50	-60	-70	-80	-90	-100	-110	-120	-130	-140
EX4	0	5	5	5	5	5	5	5	5	5	5
EX5		14	15	15	16	16	16	16	16	16	16
EX6		33	35	36	38	38	39	39	39	39	38
EX4	-10	4	4	5	5	5	5	5	5	5	5
EX5		12	13	14	15	15	15	16	15	16	15
EX6		29	32	34	35	36	37	37	37	37	37
EX4	-20	3	4	4	4	5	5	5	5	5	5
EX5		10	12	13	14	14	15	15	15	15	15
EX6		24	28	31	33	34	35	36	36	36	36
EX4	-30	2	3	4	4	4	4	5	5	5	5
EX5		7	9	11	12	13	13	14	14	14	14
EX6		17	23	26	29	31	32	33	33	33	34
EX4	-40	-	2	3	3	4	4	4	4	4	4
EX5		-	6	9	10	11	12	12	13	13	13
EX6		-	16	21	25	27	29	30	31	31	31
EX4	-50	-	-	2	3	3	3	4	4	4	4
EX5		-	-	5	8	9	10	11	11	12	12
EX6		-	-	13	19	23	25	26	27	28	28

R-124 Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)				
		80	70	60	50	40
EX4	210	2	2	2	2	2
EX5		6	6	6	5	5
EX6		15	14	13	13	12
EX4	200	2	2	2	2	2
EX5		7	6	6	6	6
EX6		16	15	15	14	14
EX4	190	2	2	2	2	2
EX5		7	7	7	7	6
EX6		17	17	17	16	15
EX4	180	3	2	2	2	2
EX5		8	8	7	7	7
EX6		18	18	18	17	17
EX4	170	3	3	2	2	2
EX5		8	8	8	7	7
EX6		18	18	18	18	17
EX4	160	3	3	3	3	3
EX5		8	8	8	8	8
EX6		18	19	19	18	18
EX4	150	2	2	3	3	3
EX5		7	8	8	8	8
EX6		18	18	18	18	18

R-744 Extended Capacities (Tons) - EX4-8 Series, as expansion and liquid injection valves

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

Valve Type	Condensing Temperature (°F)	Evaporating Temperature (°F)						
		10	0	-10	-20	-30	-40	-50
EX4	30	6	7	8	9	10	10	10
EX5		18	22	25	27	29	30	31
EX6		43	53	60	65	70	73	75
EX7		117	145	165	179	191	200	206
EX8		312	388	439	479	510	534	549
EX4	20	-	6	7	8	9	9	10
EX5		-	18	22	25	27	29	30
EX6		-	43	53	60	65	69	72
EX7		-	119	145	164	178	189	197
EX8		-	319	387	437	476	506	526
EX4	10	-	-	6	7	8	9	9
EX5		-	-	18	22	25	27	29
EX6		-	-	43	53	60	65	68
EX7		-	-	119	145	163	178	187
EX8		-	-	318	386	436	474	500
EX4	0	-	-	-	6	7	8	9
EX5		-	-	-	17	21	24	26
EX6		-	-	-	41	51	58	63
EX7		-	-	-	114	140	159	172
EX8		-	-	-	303	373	423	458
EX4	-10	-	-	-	-	5	7	8
EX5		-	-	-	-	17	20	23
EX6		-	-	-	-	40	49	55
EX7		-	-	-	-	109	134	152
EX8		-	-	-	-	290	359	405
EX4	-20	-	-	-	-	3	5	6
EX5		-	-	-	-	19	16	20
EX6		-	-	-	-	22	38	47
EX7		-	-	-	-	61	104	129
EX8		-	-	-	-	163	278	344
EX4	-30	-	-	-	-	-	3	5
EX5		-	-	-	-	-	8	15
EX6		-	-	-	-	-	19	35
EX7		-	-	-	-	-	53	96
EX8		-	-	-	-	-	142	257

EX4-8 Nominal capacities (Tons) - as hot gas bypass regulator

Valve Type	R-22/R-407C	R-134a	R-404A/R-507
EX4	1.4	1.0	1.3
EX5	4.5	3.1	4.3
EX6	10.5	7.3	10.1
EX7	37.3	26.0	35.7
EX8	113.0	79.0	108.5

The nominal capacity is based on the following conditions:

Refrigerant	Evaporating Temperature	Condensing Temperature	Subcooling
R-22, R-134a, R-404A, R-507	+40°F	+100°F	2°F
R-407C	+40°F bubble point	+100°F dew point	2°F

Remarks: Note 1: Bi-flow versions are not released for hot gas bypass applications.

Note 2: EX4, EX5, EX6, EX7 and EX8 must be installed with motor downward in hot gas line applications.

This insures the valve life expectancy.

Extended Capacities (Tons) - EX4-8 Series

Valve Type	Liquid / Condensing Temperature°F	R-22 / R-407C	R-134a	R-404A / R-507
EX4	140 bubble point for all refrigerants (147 dew point for R-407C)	2	1	2
EX5		7	5	6
EX6		15	11	13
EX7		54	38	46
EX8		165	117	139
EX4	130 bubble point for all refrigerants (138 dew point for R-407C)	2	1	2
EX5		6	4	5
EX6		14	10	12
EX7		49	35	44
EX8		150	106	132
EX4	120 bubble point for all refrigerants (128 dew point for R-407C)	2	1	2
EX5		6	4	5
EX6		13	9	12
EX7		45	32	41
EX8		138	97	126
EX4	110 bubble point for all refrigerants (119 dew point for R-407C)	2	1	1
EX5		5	3	5
EX6		12	8	11
EX7		41	29	38
EX8		124	87	117

EX6-8 Nominal capacities (Tons) - as suction pressure regulator (evaporator or crankcase)

Valve Type	R-407C	R-22	R-134a	R-404A
EX6	1.1	1.1	0.9	1.0
EX7	3.8	4.0	3.0	3.5
EX8	11.5	12.2	9.2	10.5

The nominal capacity is based on the following conditions:

Refrigerant	Evaporating Temperature	Condensing Temperature	Subcooling	Pressure Drop
R-22, R-134a, R-404A	+40°F	+100°F	2°F	2 psid
R-407C	+40°F bubble point	+100°F dew point	2°F	2 psid

Remarks: Bi-flow versions are not released for use below -40°F.
EX6, EX7 and EX8 must be installed with motor downward in suction line applications.
This insures the valve life expectancy.

Multiply above nominal capacities by following factors to obtain capacities at different pressure drops:

ΔP, psid	1.5	2.0	3.0	4.5
Correction factor	0.82	1.00	1.15	1.41

Example: EX6 provides 1 ton at 2.0 psid pressure drop with R-404A: 4 psi pressure drop.

R-22 Extended Capacities (Tons) - EX6-8 Series, suction pressure regulator duty

Valve Type	Condensing Temperature °F	Evaporating Temperature °F									
		50	40	30	20	10	0	-10	-20	-30	-40
EX6	140	1	1	1	1	1	1	1	0	0	0
EX7		4	3	3	3	2	2	2	1	1	
EX8		11	10	9	8	7	6	5	4	3	
EX6	130	1	1	1	1	1	1	1	0	0	0
EX7		4	3	3	3	3	2	2	1	1	
EX8		12	11	10	8	8	7	6	5	4	4
EX6	120	1	1	1	1	1	1	1	0	0	0
EX7		4	4	3	3	3	2	2	2	1	1
EX8		12	11	10	9	8	7	6	5	4	4
EX6	110	1	1	1	1	1	1	1	1	0	0
EX7		4	4	3	3	3	2	2	2	2	1
EX8		13	12	11	9	8	7	6	6	5	4
EX6	100	1	1	1	1	1	1	1	1	0	0
EX7		4	4	4	3	3	3	2	2	2	1
EX8		14	12	11	10	9	8	7	6	5	4

R-407C Extended Capacities (Tons) - EX6-8 Series, suction pressure regulator duty

Valve Type	Condensing Temperature Bubble Point °F	Evaporating Temperature °F				
		50	40	30	20	10
EX6	140	1	1	1	1	1
EX7		3	3	3	2	2
EX8		10	9	8	7	6
EX6	130	1	1	1	1	1
EX7		4	3	3	2	2
EX8		11	9	8	7	7
EX6	120	1	1	1	1	1
EX7		4	3	3	3	2
EX8		12	10	9	8	7
EX6	110	1	1	1	1	1
EX7		4	4	3	3	2
EX8		12	11	10	8	8
EX6	100	1	1	1	1	1
EX7		4	4	3	3	3
EX8		13	11	10	9	8

R-134a Extended Capacities (Tons) - EX6-8 Series, suction pressure regulator duty

Valve Type	Condensing Temperature °F	Evaporating Temperature °F				
		50	40	30	20	10
EX6	140	1	1	1	1	0
EX7		3	2	2	2	2
EX8		8	7	6	5	5
EX6	130	1	1	1	1	0
EX7		3	3	2	2	2
EX8		9	8	7	6	5
EX6	120	1	1	1	1	1
EX7		3	3	2	2	2
EX8		9	8	7	6	5
EX6	110	1	1	1	1	1
EX7		3	3	3	2	2
EX8		10	9	8	7	6
EX6	100	1	1	1	1	1
EX7		3	3	3	2	2
EX8		11	9	8	7	6

R-404A/R-507 Extended Capacities (Tons) - EX6-8 Series, suction pressure regulator duty

Valve Type	Condensing Temperature °F	Evaporating Temperature °F									
		50	40	30	20	10	0	-10	-20	-30	-40
EX6	140	1	1	1	0	0	0	0	0	0	0
EX7		3	2	2	2	2	1	1	1	1	1
EX8		8	7	6	5	5	4	3	3	2	2
EX6	130	1	1	1	1	1	0	0	0	0	0
EX7		3	3	2	2	2	2	1	1	1	1
EX8		9	8	7	6	5	5	4	3	3	2
EX6	120	1	1	1	1	1	0	0	0	0	0
EX7		3	3	3	2	2	2	1	1	1	1
EX8		10	9	8	7	6	5	4	4	3	3
EX6	110	1	1	1	1	1	1	0	0	0	0
EX7		4	3	3	2	2	2	2	1	1	1
EX8		11	10	9	8	7	6	5	4	4	3
EX6	100	1	1	1	1	1	1	1	0	0	0
EX7		4	3	3	3	2	2	2	2	1	1
EX8		12	11	9	8	7	6	5	5	4	3

EX5-8 Nominal capacities (Tons) - as condensing pressure regulator and liquid duty

Valve Type	R-407C	R-22	R-134a	R-404A
EX5	5	6	5	4
EX6	12	13	12	9
EX7	44	46	43	31
EX8	133	140	131	93

Refrigerant	Evaporating Temperature	Condensing Temperature	Subcooling	Pressure Drop
R-22, R-134a, R-404A	+40°F	+100°F	2°F	5 psid
R-407C	+40°F dew point	+100°F bubble	2°F	5 psid

Multiply above nominal capacities by following factors to obtain capacities at different pressure drops.

ΔP, psid	2.0	3.0	5.0
Correction factor	0.65	0.76	1.00

R-22 Extended Capacities (Tons) - EX5-8 Series, condensing pressure regulator and liquid duty

Valve Type	Condensing Temperature °F	Evaporating Temperature °F									
		50	40	30	20	10	0	-10	-20	-30	-40
EX5	140	4	4	4	4	4	4	4	4	4	4
EX6		10	10	10	10	10	9	9	9	9	9
EX7		36	36	35	35	34	33	33	32	31	31
EX8		111	109	107	105	104	102	100	98	96	94
EX5	130	5	5	5	4	4	4	4	4	4	4
EX6		11	11	11	10	10	10	10	10	10	9
EX7		39	38	38	37	37	36	35	35	34	33
EX8		118	116	115	113	111	109	107	105	103	101
EX5	120	5	5	5	5	5	5	5	5	4	4
EX6		12	12	11	11	11	11	11	10	10	10
EX7		42	41	41	40	39	39	38	37	37	36
EX8		126	125	123	121	119	117	115	113	111	109
EX5	110	5	5	5	5	5	5	5	5	5	5
EX6		12	12	12	12	12	12	11	11	11	11
EX7		44	43	43	42	42	41	40	40	39	38
EX8		133	132	130	128	126	124	122	120	118	116
EX5	100	6	6	6	5	5	5	5	5	5	5
EX6		13	13	13	13	12	12	12	12	12	11
EX7		47	46	46	45	44	44	43	42	41	41
EX8		142	140	138	136	134	132	130	128	126	124

**R-134a Extended Capacities (Tons) - EX5-8 Series,
condensing pressure regulator and liquid duty**

Valve Type	Condensing Temperature °F	Evaporating Temperature °F			
		50	40	30	20
EX5	140	4	4	4	4
EX6		9	9	9	8
EX7		33	32	31	30
EX8		100	98	95	92
EX5	130	4	4	4	4
EX6		10	10	9	9
EX7		36	35	34	33
EX8		108	105	102	99
EX5	120	5	5	4	4
EX6		11	11	10	10
EX7		39	38	37	36
EX8		117	115	112	108
EX5	110	5	5	5	5
EX6		12	11	11	11
EX7		41	40	39	38
EX8		125	122	119	116
EX5	100	5	5	5	5
EX6		12	12	12	12
EX7		44	43	42	41
EX8		134	131	128	125

**R-1404A/R-507 Extended Capacities (Tons) - EX5-8 Series,
condensing pressure regulator and liquid duty**

Valve Type	Condensing Temperature °F	Evaporating Temperature °F									
		50	40	30	20	10	0	-10	-20	-30	-40
EX5	140	2	2	2	2	2	2	2	2	2	2
EX6		5	5	5	5	5	4	4	4	4	4
EX7		19	19	18	17	17	16	15	14	13	13
EX8		59	57	55	52	50	48	45	43	41	38
EX5	130	3	3	3	2	2	2	2	2	2	2
EX6		6	6	6	6	5	5	5	5	5	4
EX7		22	22	21	20	19	19	18	17	16	15
EX8		68	66	63	61	59	56	54	52	49	47
EX5	120	3	3	3	3	3	3	3	2	2	2
EX6		7	7	7	7	6	6	6	6	5	5
EX7		26	25	24	23	23	22	21	20	19	19
EX8		78	76	73	71	69	66	64	61	59	56
EX5	110	3	3	3	3	3	3	3	3	3	3
EX6		8	8	8	7	7	7	7	6	6	6
EX7		28	28	27	26	25	24	23	23	22	21
EX8		86	84	81	79	77	74	71	69	66	64
EX5	100	4	4	4	4	3	3	3	3	3	3
EX6		9	9	8	8	8	8	7	7	7	7
EX7		31	31	30	29	28	27	26	26	25	24
EX8		95	93	91	88	86	83	80	78	75	73

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

R-407C Extended Capacities (Tons) - EX5-8 Series, condensing pressure regulator and liquid duty

Valve Type	Condensing Temperature Dew Point °F	Evaporating Temperature °F			
		50	40	30	20
EX5	140	4	4	4	4
EX6		9	9	9	8
EX7		32	32	31	30
EX8		98	96	94	91
EX5	130	4	4	4	4
EX6		10	10	9	9
EX7		35	34	34	33
EX8		106	105	102	100
EX5	120	5	5	4	4
EX6		11	11	10	10
EX7		38	38	37	36
EX8		117	115	112	110
EX5	110	5	5	5	5
EX6		12	11	11	11
EX7		41	40	40	39
EX8		125	123	120	118
EX5	100	5	5	5	5
EX6		12	12	12	12
EX7		44	44	43	42
EX8		135	133	130	128

EX6-8 Nominal capacities (Tons) - for hot gas flow such as heat reclaim application

Valve Type	R-22 / R-407C	R-404A / R-507
EX6	3.1	2.8
EX7	11.1	10.2
EX8	33.8	30.7

The nominal capacity is based on the following conditions:

Refrigerant	Evaporating temperature	Condensing temperature	Subcooling	Pressure Drop	Isentropic Efficiency
R-22, R-404A, R-507	+40°F	+100°F	2°F	2 psid	80%
R-407C	+40°F bubble point	+100°F dew point	2°F	2 psid	80%

Remarks: Bi-flow versions are not released for hot gas flow applications.

EX6, EX7 and EX8 must be installed with motor downward in suction line applications. This insures the valve life expectancy.

R-22/R-407C Extended Capacities (Tons) - EX6-8 Series, hot gas flow such as heat reclaim application

Valve Type	Condensing Temperature °F	Pressure Drop psi	Evaporating Temperature °F											
			60	50	40	30	20	10	0	-10	-20	-30	-40	-50
EX6	140	1.5	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1
EX7			5.6	5.5	5.3	5.2	5.0	4.9	4.7	4.6	4.4	4.3	4.1	4.0
EX8			17.0	16.6	16.2	15.7	15.3	14.8	14.4	13.9	13.4	13.0	12.5	12.0
EX6		7	3.4	3.3	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4
EX7			12.2	11.9	11.6	11.3	10.9	10.6	10.3	10.0	9.6	9.3	9.0	8.6
EX8			37.0	36.1	35.2	34.2	33.3	32.3	31.3	30.3	29.3	28.2	27.2	26.2
EX6		14	4.8	4.7	4.5	4.4	4.3	4.2	4.0	3.9	3.8	3.7	3.5	3.4
EX7			17.3	16.9	16.4	16.0	15.6	15.1	14.6	14.2	13.7	13.2	12.7	12.3
EX8			52.5	51.3	49.9	48.6	47.3	45.9	44.5	43.0	41.6	40.2	38.7	37.3
EX6	120	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1
EX7			5.5	5.3	5.2	5.1	4.9	4.8	4.7	4.5	4.4	4.3	4.1	4.0
EX8			16.6	16.2	15.8	15.4	15.0	14.6	14.2	13.8	13.4	12.9	12.5	12.1
EX6		7	3.3	3.3	3.2	3.1	3.0	2.9	2.9	2.8	2.7	2.6	2.5	2.4
EX7			11.8	11.6	11.3	11.0	10.7	10.4	10.1	9.9	9.6	9.3	8.9	8.6
EX8			35.9	35.1	34.3	33.5	32.6	31.7	30.8	29.9	29.0	28.1	27.2	26.2
EX6		14	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.7	3.6	3.5	3.4
EX7			16.8	16.4	16.0	15.6	15.2	14.8	14.4	14.0	13.5	13.1	12.7	12.3
EX8			50.9	49.7	48.6	47.4	46.2	44.9	43.7	42.4	41.1	39.8	38.5	37.2
EX6	100	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1
EX7			5.2	5.1	5.0	4.9	4.7	4.6	4.5	4.4	4.3	4.1	4.0	3.9
EX8			15.8	15.4	15.1	14.7	14.4	14.0	13.7	13.3	12.9	12.5	12.2	11.8
EX6		7	3.2	3.1	3.0	3.0	2.9	2.8	2.7	2.7	2.6	2.5	2.4	2.4
EX7			11.2	11.0	10.7	10.5	10.2	10.0	9.7	9.5	9.2	8.9	8.7	8.4
EX8			34.1	33.4	32.6	31.9	31.1	30.4	29.6	28.8	28.0	27.1	26.3	25.5
EX6		14	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3
EX7			15.8	15.5	15.2	14.8	14.5	14.1	13.7	13.4	13.0	12.6	12.2	11.8
EX8			48.0	47.0	46.0	45.0	43.9	42.8	41.7	40.6	39.5	38.3	37.2	36.0
EX6	80	1.5	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.0
EX7			4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7
EX8			14.7	14.4	14.1	13.8	13.5	13.2	12.8	12.5	12.2	11.9	11.5	11.2
EX6		7	2.9	2.9	2.8	2.8	2.7	2.6	2.6	2.5	2.4	2.4	2.3	2.2
EX7			10.4	10.2	10.0	9.8	9.6	9.3	9.1	8.9	8.6	8.4	8.2	7.9
EX8			31.6	31.0	30.4	29.7	29.0	28.4	27.7	27.0	26.3	25.6	24.8	24.1
EX6		14	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.3	3.2	3.1
EX7			14.6	14.3	14.0	13.7	13.4	13.1	12.8	12.5	12.1	11.8	11.5	11.1
EX8			44.3	43.4	42.6	41.7	40.7	39.8	38.8	37.9	36.9	35.9	34.8	33.8

R-404A/R-507 Extended Capacities (Tons) - EX6-8 Series, hot gas flow such a heat reclaim applications

Valve Type	Condensing Temperature °F	Pressure Drop psi	Evaporating Temperature °F												
			60	50	40	30	20	10	0	-10	-20	-30	-40	-50	
EX6	140	1.5	1.2	1.1	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	
EX7			4.2	4.1	3.9	3.7	3.5	3.3	3.2	3.0	2.8	2.6	2.4	2.2	
EX8			12.8	12.3	11.8	11.3	10.7	10.1	9.6	9.0	8.4	7.8	7.2	6.6	
EX6		7	2.6	2.5	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.4	1.3	
EX7			9.2	8.8	8.4	8.1	7.7	7.3	6.8	6.4	6.0	5.6	5.2	4.7	
EX8			27.8	26.7	25.6	24.5	23.3	22.0	20.8	19.5	18.2	16.9	15.6	14.4	
EX6		14	3.6	3.4	3.3	3.2	3.0	2.8	2.7	2.5	2.4	2.2	2.0	1.9	
EX7			13.0	12.5	12.0	11.4	10.9	10.3	9.7	9.1	8.5	7.9	7.3	6.7	
EX8			39.4	37.9	36.3	34.7	33.0	31.3	29.5	27.7	25.9	24.1	22.2	20.4	
EX6		120	1.5	1.3	1.3	1.2	1.2	1.1	1.1	1.0	1.0	0.9	0.9	0.8	0.8
EX7				4.6	4.5	4.3	4.2	4.0	3.8	3.7	3.5	3.3	3.2	3.0	2.8
EX8				14.0	13.6	13.1	12.7	12.2	11.7	11.2	10.7	10.1	9.6	9.1	8.5
EX6	7		2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7	
EX7			10.0	9.7	9.4	9.0	8.7	8.3	8.0	7.6	7.2	6.9	6.5	6.1	
EX8			30.4	29.5	28.5	27.5	26.4	25.4	24.3	23.1	22.0	20.9	19.7	18.6	
EX6	14		3.9	3.8	3.7	3.5	3.4	3.3	3.1	3.0	2.8	2.7	2.5	2.4	
EX7			14.1	13.7	13.3	12.8	12.3	11.8	11.3	10.8	10.3	9.7	9.2	8.7	
EX8			43.0	41.7	40.3	38.9	37.4	35.9	34.4	32.8	31.2	29.6	28.0	26.3	
EX6	100		1.5	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.0	1.0	0.9	0.9
EX7				4.7	4.6	4.4	4.3	4.2	4.0	3.9	3.7	3.6	3.4	3.3	3.1
EX8				14.2	13.9	13.5	13.1	12.7	12.2	11.8	11.4	10.9	10.4	10.0	9.5
EX6		7	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.2	2.1	2.0	1.9	
EX7			10.1	9.9	9.6	9.3	9.0	8.7	8.4	8.1	7.8	7.4	7.1	6.8	
EX8			30.8	30.0	29.2	28.3	27.4	26.5	25.5	24.6	23.6	22.6	21.6	20.6	
EX6		14	4.0	3.9	3.7	3.6	3.5	3.4	3.3	3.2	3.0	2.9	2.8	2.6	
EX7			14.3	13.9	13.5	13.1	12.7	12.3	11.9	11.4	11.0	10.5	10.0	9.6	
EX8			43.5	42.3	41.2	39.9	38.7	37.4	36.1	34.7	33.3	31.9	30.5	29.1	
EX6		80	1.5	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.0	1.0	0.9	0.9
EX7				4.6	4.5	4.4	4.2	4.1	4.0	3.9	3.8	3.6	3.5	3.4	3.2
EX8				13.9	13.6	13.3	12.9	12.6	12.2	11.8	11.4	11.0	10.6	10.2	9.8
EX6	7		2.8	2.7	2.6	2.6	2.5	2.4	2.4	2.3	2.2	2.1	2.0	2.0	
EX7			9.9	9.6	9.4	9.2	8.9	8.7	8.4	8.1	7.8	7.6	7.3	7.0	
EX8			30.0	29.3	28.6	27.8	27.1	26.3	25.5	24.7	23.8	22.9	22.1	21.2	
EX6	14		3.8	3.7	3.7	3.6	3.5	3.4	3.3	3.2	3.0	2.9	2.8	2.7	
EX7			13.9	13.5	13.2	12.9	12.5	12.2	11.8	11.4	11.0	10.6	10.2	9.8	
EX8			42.1	41.1	40.1	39.1	38.0	36.9	35.8	34.7	33.5	32.3	31.1	29.8	

Quick Select Guide – Refrigeration Applications

Application	Feature	Valve	Nominal Liquid Capacity R-22 (in tons)*	Nominal Liquid Capacity R-410A (in tons)*
		100RB2	1.3	
		200RB2	3.6	
		200RB3	4.8	
		200RB4	8.0	
		200RB5	8.2	
		200RB6	9.5	
		200RB7	17.0	
		200RB9	30.5	
		200RB12	34.9	
		200RD 2		3.4
		200RD 3		4.5
		200RD 4		7.5
		200RD 5		7.7
		200RD 6		8.9
		240RA8	15.6	
		240RA9 (5/8)	23.3	
		240RA9 (1-1/8)	30.5	
		240RA12	34.9	
	240RA16	58.0		
	240RA20	95.4		
	Two Way, Normally Open Solenoid Valve	500RB2	3.1	
		500RB3	4.8	
		500RB4	5.6	
		500RB5	8.2	
		500RB6	10.0	
		500RB7	15.6	
		540RA8	15.6	
		540RA9 (5/8)	23.3	
540RA9 (1-1/8)		30.5		
540RA12		34.9		
540RA16	58.0			
540RA20	95.4			

* 3 psi pressure drop per ARI Standard 760.
All ratings are based on largest connection size.

100RB

The 100RB is a direct-acting, 2-way, normally closed valve. 100 RB valves are used for liquid or discharge gas refrigerant service.

Features

- One coil fits all valve sizes
- Extended ends for easy installation (standard)
- Long-life molded coils
- PTFE O-ring for superior external sealing



Options

- SAE or ODF connection sizes in 1/4" and 3/8", 1/4" NPTF

Specifications

- Maximum fluid temperature: 250°F
- Maximum working pressure: 500 psig
- MOPD: 300 psig
- UL/CUL file number: MP 604

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

Nomenclature example: 100RB 2F2 VLC

100R	B	2	F	2	VLC
Valve Series	Design Series	Port Size (in 1/16")	Connection Type F = SAE S = ODF P = NPTF	Connection Size (in 1/8")	Coil*

*NOTE: Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability.

Ordering Information and Nominal* Liquid Capacity Table – Tons (kW)

PCN	Product Description	Connection Size	R-12	R-134a	R-450A/ R-513A	R-22	R-407C	R-404A/ R-507	R-448A/ R-449A
047503	100RB 2S2 VLC	1/4" ODF	1.0 (3.5)	0.96 (3.4)	0.9 (3.1)	1.27 (4.5)	1.21 (4.3)	0.85 (3.0)	1.3 (4.5)
047504	100RB 2S3 VLC	3/8" ODF							
047505	100RB 2S4 VLC	1/2" ODF							
047500	100RB 2F2 VLC	1/4" SAE							
047501	100RB 2F3 VLC	3/8" SAE							
047502	100RB 2P2 VLC	1/4" NPTF							

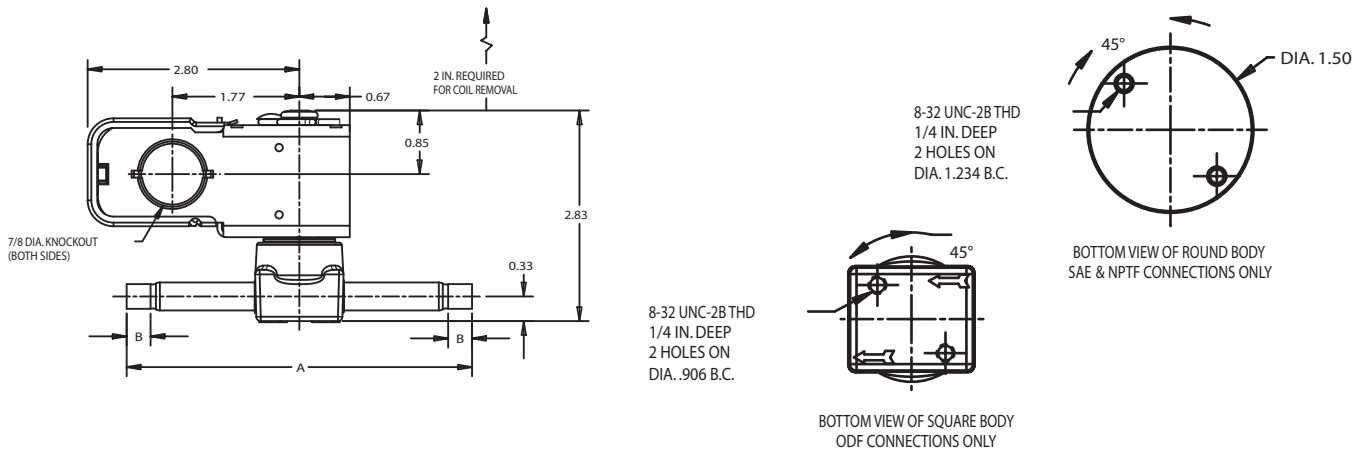
Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87.

*See Extended Capacity Tables for ratings at a wide range of conditions.

Standard Product Offering

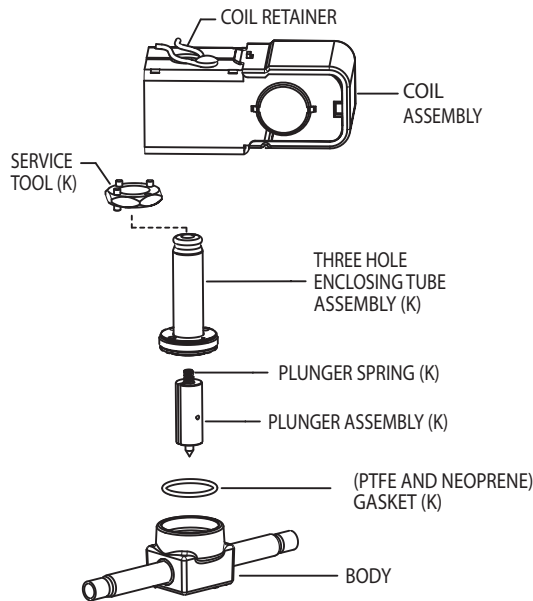
100RB

Dimensional Data (in)



VALVE	CONNECTION SIZE	A	B
100RB 2S2 VLC	1/4 ODF	4.63	0.31
100RB 2S3 VLC	3/8 ODF	4.63	0.31
100RB 2S4 VLC	1/2 ODF	4.63	0.38
100RB 2F2 VLC	1/4 SAE	3.10	-
100RB 2F3 VLC	3/8 SAE	3.47	-
100RB 2P2 VLC	1/4 NPTF	1.56	-

Exploded View & Parts Kit Data



Valve Repair Kit

"K" indicates part is supplied in valve repair kit **KS30112** (PCN 049191)
Note: Universal (2/3 hole) spanner wrench X11981-1 (PCN 027451) included in complete repair kit.

Coil Assembly

See coil assemblies for availability.

Parts Kit

KG-10041 PCN: 054812
(Contains 12 pieces each of PTFE and neoprene O-rings.)

200RB

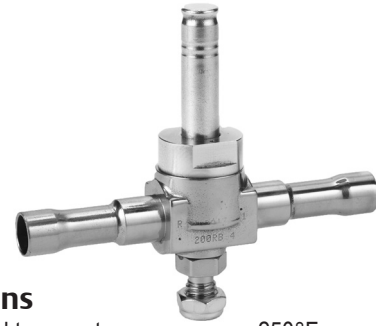
The 200RB is a pilot-operated, 2-way, normally closed valve. 200RB valves are used for liquid, discharge, or suction gas refrigerant service.

Features

- One coil fits all valve sizes
- Extended ends for easy installation (standard)
- Long-life molded coils
- PTFE O-ring for superior external sealing

Options

- Available in 7 orifice sizes
- Manual stem or mounting stud
- Bi-Flow operation-conversion either factory assembled or with kit (except 200RB 7 & 9)



Specifications

- Maximum fluid temperature: 250°F
- Maximum working pressure: 500 psig
- Minimum operating pressure drop: 2 psi
- MOPD: 300 psig
- UL/CUL file number: MP604

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

NOTE: MOPD based on AC application. Consult Application Engineer for DC applications.

Nomenclature example: 200RB 4T3M VLC

200R	B	4	T	3	M	VLC
Valve Series	Design Series	Port Size (in 1/16")	Connection Type F = SAE S = ODF T = Copper Extended Ends	Connection Size (In 1/8")	M = manual stem T = mounting stud (optional)	Coil*

*NOTE: Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability.

Ordering Information and Nominal* Liquid Capacity Table – Tons (kW)

PCN			Description	Connection Size	R-134a	R-450A/ R-512A	R-22	R-407C	R-404A/ R-507	R-448A/ R-449A
Standard Valve	Mounting Stud ¹	Manual Stem ²								
053104	--	N/A	200RB 2 F 2	1/4 SAE	2.7 (9.6)	2.5 (8.7)	3.6 (12.7)	3.4 (11.9)	2.3 (8.2)	3.6 (12.7)
062611	--	N/A	200RB 2 F 3	3/8 SAE						
053105	053236	N/A	200RB 2 T 2	1/4 ODF						
053106	054170	N/A	200RB 2 T 3	3/8 ODF	3.6 (12.7)	3.3 (11.6)	4.8 (16.9)	4.5 (15.9)	3.1 (10.9)	4.8 (17.0)
052726	056438	--	200RB 3 F 3	3/8 SAE						
052727	055855	--	200RB 3 F 4	1/2 SAE						
049608	--	--	200RB 3 T 2	1/4 ODF	6.0 (21.1)	5.5 (19.3)	8.0 (28.0)	7.5 (26.3)	5.1 (18.0)	8.0 (28.1)
049609	049585	065620	200RB 3 T 3	3/8 ODF						
049692	--	065621	200RB 3 T 4	1/2 ODF						
047506	047508	047507	200RB 4 F 3	3/8 SAE	6.2 (21.8)	5.7 (19.9)	8.2 (28.9)	7.7 (27.2)	5.3 (18.6)	8.3 (29.0)
047511	047513	047512	200RB 4 S 3	3/8 ODF X 1/2 ODM						
047516	047515	047514	200RB 4 S 4	1/2 ODF X 5/8 ODM						
047517	049162	049186	200RB 4 T 3	3/8 ODF	7.2 (25.2)	6.5 (23.0)	9.5 (33.3)	8.9 (31.4)	6.1 (21.5)	9.5 (33.5)
047518	049163	049187	200RB 4 T 4	1/2 ODF						
058950	058045	056518	200RB 4 T 5	5/8 ODF						
047519	047521	047520	200RB 5 F 4	1/2 SAE	12.7 (44.6)	11.7 (41.2)	17.0 (59.8)	16.2 (57.0)	11.1 (39.0)	17.1 (60.0)
059729	047523	047522	200RB 5 F 5	5/8 SAE						
047524	047526	047525	200RB 5 S 4	1/2 ODF X 5/8 ODM						
049201	047528	047527	200RB 5 S 5	5/8 ODF	22.5 (79.1)	20.3 (71.5)	29.5 (103.8)	28.0 (98.3)	18.3 (64.2)	29.6 (104.2)
061227	054323	--	200RB 5 T 3	3/8 ODF						
057206	049164	049188	200RB 5 T 4	1/2 ODF						
059730	049165	049189	200RB 5 T 5	5/8 ODF	12.7 (44.6)	11.7 (41.2)	17.0 (59.8)	16.2 (57.0)	11.1 (39.0)	17.1 (60.0)
059731	047531	047530	200RB 6 F 4	1/2 SAE						
059732	047534	047533	200RB 6 F 5	5/8 SAE						
047537	047539	047538	200RB 6 S 4	1/2 ODF X 5/8 ODM	7.2 (25.2)	6.5 (23.0)	9.5 (33.3)	8.9 (31.4)	6.1 (21.5)	9.5 (33.5)
047540	047542	047541	200RB 6 S 5	5/8 ODF						
047544	047546	047545	200RB 6 T 4	1/2 ODF						
056766	047548	047547	200RB 6 T 5	5/8 ODF	12.7 (44.6)	11.7 (41.2)	17.0 (59.8)	16.2 (57.0)	11.1 (39.0)	17.1 (60.0)
064037	--	--	200RB 7 S 5	5/8 ODF X 7/8 ODM						
064062	--	--	200RB 7 T 4	1/2 ODF						
064063	064562	064267	200RB 7 T 5	5/8 ODF	22.5 (79.1)	20.3 (71.5)	29.5 (103.8)	28.0 (98.3)	18.3 (64.2)	29.6 (104.2)
064282	064284	064283	200RB 7 T 7	7/8 ODF						
064762	064764	064763	200RB 9 T 5	5/8 ODF						
064645	064766	064765	200RB 9 T 7	7/8 ODF	22.5 (79.1)	20.3 (71.5)	29.5 (103.8)	28.0 (98.3)	18.3 (64.2)	29.6 (104.2)
064767	064769	064768	200RB 9 T 9	1 1/8 ODF						

¹ Add "T" to the end of description for Mounting Stud

² Add "M" to the end of the description for Manual Stem

Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87.

All ratings are based on largest connection size.

*See Extended Capacity Tables for ratings at a wide range of conditions.

Standard Product Offering

200RB

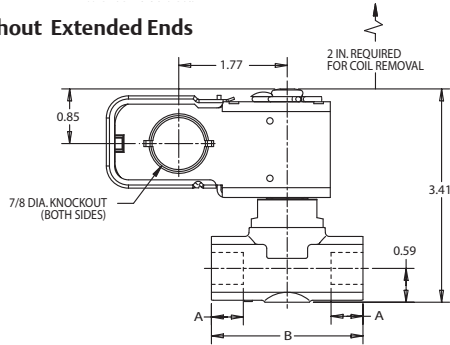
Ordering Information and Nominal Reverse Flow Liquid Capacity Table for Bi-Flow Solenoids *

PCN	Description	Connection Size	R-134A	R-450A/ R-513A	R-407C	R-22	R-404A/ R-507	R-448A/ R-449A
009689	200RB GS-1925 3 T 3	3/8 ODF	4.4 (15.6)	4.1 (14.3)	5.2 (18.3)	5.5 (19.5)	3.6 (12.6)	5.6 (19.6)
009690	200RB GS-1926 4 T 3	3/8 ODF	7.4 (25.9)	6.7 (23.6)	8.6 (30.4)	9.2 (32.3)	5.9 (20.8)	9.2 (32.4)
009692	200RB GS-1928 5 T 4	1/2 ODF	7.6 (26.7)	6.9 (24.4)	8.9 (31.4)	9.5 (33.4)	6.1 (21.5)	9.5 (33.5)
009693	200RB GS-1929 5 T 5	5/8 ODF						
009694	200RB GS-1930 6 T 5	5/8 ODF	838 (30.8)	8.0 (28.2)	10.3 (36.2)	11.0 (38.5)	7.1 (24.8)	11.0 (38.7)

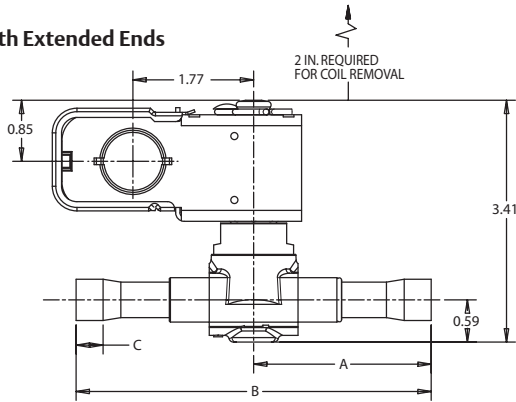
*For normal direction flow capacities see 200RB Extended Capacity Tables

200RB 2-6 Dimensional Data (in)

Without Extended Ends



With Extended Ends



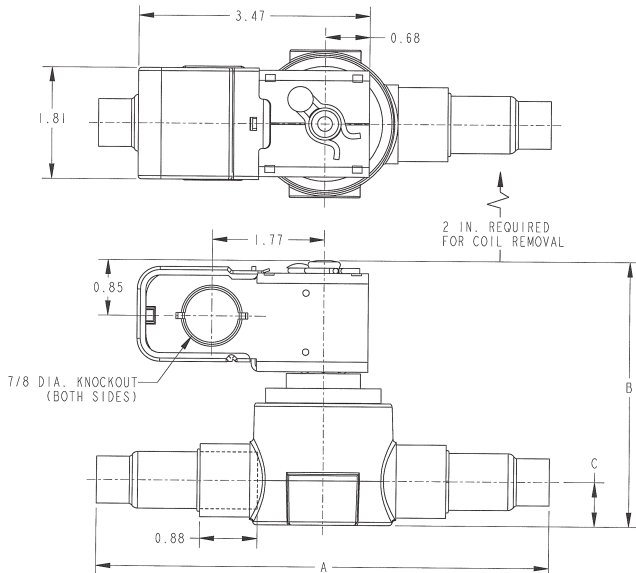
Without Extended Ends

Valve	Port Size	Conn. Size & Style	A	B
200RB 4S3	1/4	3/8 ODF x 1/2 ODM	0.50	2.37
200RB 4S4		1/2 ODF x 5/8 ODM	0.56	
200RB 4F3		3/8 SAE (male flare)	-	
200RB 5S4	5/16	1/2 ODF x 5/8 ODM	0.56	2.37
200RB 5S5		5/8 ODF		
200RB 5F4		1/2 SAE (male flare)		
200RB 5F5	5/8 SAE (male flare)	-	3.50	
200RB 6S4	3/8	1/2 ODF x 5/8 ODM	0.56	2.37
200RB 6S5		5/8 ODF		
200RB 6F4		1/2 SAE (male flare)		
200RB 6F5	5/8 SAE (male flare)	-	3.50	

With Extended Ends

Valve	Port Size	Conn. Size & Style	A	B	C
200RB 2T2	1/8	1/4 ODF	2.42	4.62	0.25
200RB 2T3		3/8 ODF			0.31
200RB 3T2	3/16	1/4 ODF	2.42	4.62	0.25
200RB 3T3		3/8 ODF			0.31
200RB 3T4	1/4	1/2 ODF	2.50	5.00	0.38
200RB 4T5		5/8 ODF	3.25	6.50	0.50
200RB 5T3	5/16	3/8 ODF	2.31	4.62	0.31
200RB 5T4		1/2 ODF	2.50	5.00	0.38
200RB 5T5		5/8 ODF	3.25	6.50	0.50
200RB 6T3	3/8	3/8 ODF	2.31	4.62	0.31
200RB 6T4		1/2 ODF	2.50	5.00	0.38
200RB 6T5		5/8 ODF	3.25	6.50	0.50

200RB 7 & 9 Dimensional Data (in)

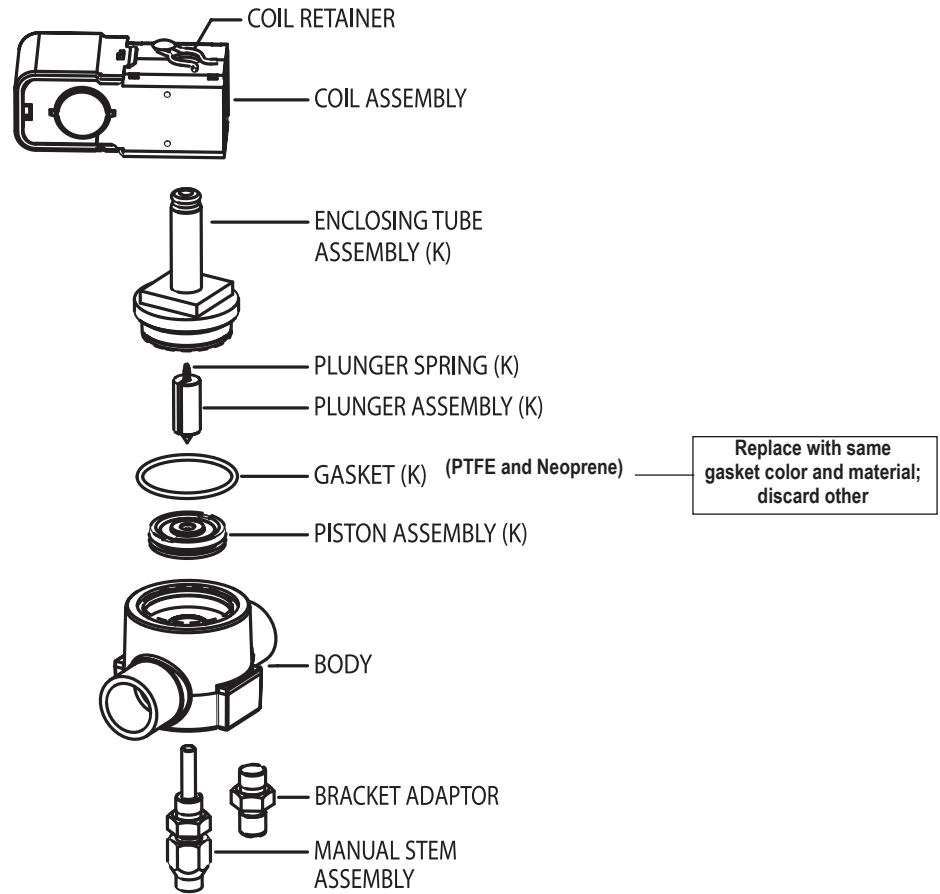


Valve	Port Size	Conn. Size & Style	A	B	C
200RB7S5	7/16	5/8 ODF x 7/8 ODM	2.98	3.69	0.53
200RB7T5		5/8 ODF x 5/8 ODF	6.88		
200RB7T7		7/8 ODF x 7/8 ODF	7.13		
200RB9T5	9/16	5/8 ODF x 5/8 ODF	6.88	4.05	0.68
200RB9T6		3/4 ODF x 3/4 ODF	7.38		
200RB9T7		7/8 ODF x 7/8 ODF	7.13		
200RB9T9		1 1/8 ODF x 1 1/8 ODF	8.50		

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

200RB Valve Kits

Exploded View & Parts Kit Data



Valve Repair Kit

"K" indicates part is supplied in valve repair kit **KS30386**. (PCN 066223)

Gasket Kit

Gasket Kit **KG10025** (PCN 049190) (contains 12 pieces - each of PTFE and neoprene O-rings)

Coil Assembly

See coil assemblies for availability.

Valve Kits

Valve	Complete Kit	PCN	Manual Opening Kit	PCN	Bi-Flow Kit	PCN	Gasket Kit	PCN
200RB2	KS30386	066223	N/A	N/A	KS30387	066224	KG10025	049190
200RB3	KS30386	066223	KS30377	065695	KS30387	066224	KG10025	049190
200RB4	KS30386	066223	KS30117	053959	KS30387	066224	KG10025	049190
200RB5	KS30386	066223	KS30117	053959	KS30387	066224	KG10025	049190
200RB6	KS30386	066223	KS30117	053959	KS30387	066224	KG10025	049190
200RB7	KS30354	064263	KS30361	064831	N/A	N/A	KG00002	064262
200RB9	KS30362	064825	KS30364	064832	N/A	N/A	KG00003	064830

Standard Product Offering

200RB Bi-Flow Conversion

Standard 200RB uni-directional valves can be converted to Bi-Flow operation by replacing the internal parts with the components in kit **KS30387** (PCN 066224). Unlike the standard valve which permits flow in one direction only when energized, the Bi-Flow version allows the valve to flow in either direction, depending on differential pressures, when energized. If the valve is not energized when flowing in the reverse direction, valve "flutter" will occur. Also, with the valve de-energized, a higher downstream pressure than upstream (back-flow) will force the valve open.

NOTE: A 200RB7 and 200RB9 and cannot be converted to a Bi-Flow valve.

200RD

The 200RD is a pilot-operated, 2-way, normally closed solenoid valve that is suitable for all refrigerants, including R-410A and R-744. 200RD valves are used for liquid, discharge or suction gas refrigerant service.

Features

- One coil fits all valve sizes
- Extended ends for easy installation (standard)
- Long-life molded coils
- PTFE O-ring for superior external sealing

Options

- Available in 7 orifice sizes
- Manual stem or mounting stud
- Bi-Flow operation-conversion either factory assembled or with kit except 200RD 7 and 200RD 9

Nomenclature

example: 200RD 4T3M VLC

200R	D	4	T	3	M	VLC
Valve Series	Design Series	Port Size (in 1/16")	Connection Type T = Copper Extended Ends	Connection Size (In 1/8")	M = manual stem T = mounting stud (optional)	Coil*

*NOTE: Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See available coil assemblies.

Ordering Information and Nominal * Liquid Capacity - Tons (kW)

PCN			Description	Connection Size	R-410A	R-744
Standard Valve	Mounting Stud ¹	Manual Stem ²				
066158	066179	-	200RD 2 T 2	1/4 ODF	3.4 (11.9)	8.16 (28.7)
066159	066180	-	200RD 2 T 3	3/8 ODF		
066160	-	-	200RD 3 T 2	1/4 ODF	4.5 (15.8)	10.86 (38.2)
066161	066182	066203	200RD 3 T 3	3/8 ODF		
066162	066183	066204	200RD 3 T 4	1/2 ODF		
066163	066184	066205	200RD 4 T 3	3/8 ODF	7.5 (26.4)	18.01 (63.3)
066164	066185	066206	200RD 4 T 4	1/2 ODF		
066165	066186	066181	200RD 4 T 5	5/8 ODF		
066166	066187	066208	200RD 5 T 3	3/8 ODF	7.7 (27.1)	18.62 (65.5)
066167	066188	066209	200RD 5 T 4	1/2 ODF		
066168	066189	066210	200RD 5 T 5	5/8 ODF		
066169	066190	066211	200RD 6 T 4	1/2 ODF	8.9 (31.3)	21.49 (75.6)
066170	066191	066212	200RD 6 T 5	5/8 ODF		
066172	066195	066214	200RD 7 T 5	5/8 ODF	15.7 (55.22)	37.62 (132.3)
066173	066194	066215	200RD 7 T 7	7/8 ODF		
066174	066202	066216	200RD 9 T 5	5/8 ODF	27.7 (97.59)	67.66 (238.0)
066175	066196	066217	200RD 9 T 7	7/8 ODF		
066176	066197	066218	200RD 9 T 9	1 1/8 ODF		

¹ Add "T" to the end of description for Mounting Stud

² Add "M" to the end of the description for Manual Stem

Capacities based on ARI standard.

All ratings are based on largest connection size

*See Extended Capacity Tables for ratings at a wide range of conditions.

Standard Product Offering



Specifications

- Maximum fluid temperature: 250°F
- Maximum working pressure: 680 psig
- Minimum operating pressure drop: 2 psi
- MOPD: 550 psig
- UL/CUL file number: MP604

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

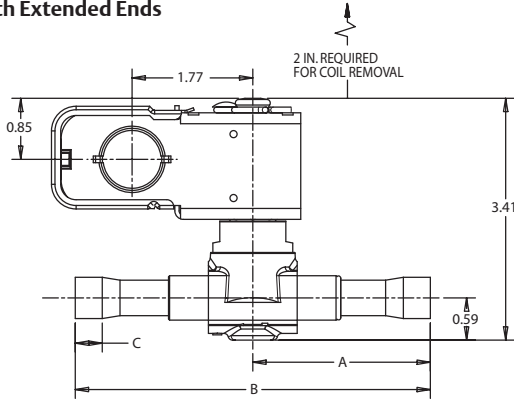
NOTE: MOPD base on AC application. Consult Application Engineer for DC applications.

200RD

Ordering Information and Nominal Liquid Capacity Table for Bi-Flow Solenoids - Tons (kW)

PCN			Description	Connection Size	R-12	R-134a	R-22	R-407C	R-404A/R-507	R-502	R-410A
Standard Valve	Mounting Stud	Manual Stem									
016996	--	--	200RD3T3 VLC BF	3/8 ODF	3.04 (10.69)	3.62 (12.73)	4.80 (16.88)	4.51 (15.86)	2.52 (8.86)	3.14 (11.04)	4.50 (15.83)
016997	--	--	200RD4T3 VLC BF	3/8 ODF	4.95 (17.41)	6.00 (21.10)	7.95 (27.96)	7.48 (26.31)	4.18 (14.70)	5.21 (18.32)	7.45 (26.20)
016998	--	--	200RD5T4 VLC BF	1/2 ODF	5.20 (18.29)	6.21 (21.84)	8.22 (28.91)	7.73 (27.19)	4.33 (15.23)	5.39 (18.96)	7.71 (27.11)
016999	--	--	200RD5T5 VLC BF	5/8 ODF							
017000	--	--	200RD6T5 VLC BF	5/8 ODF	6.01 (21.14)	7.16 (25.18)	9.48 (33.34)	8.92 (31.37)	4.99 (17.55)	6.22 (21.87)	8.89 (31.26)

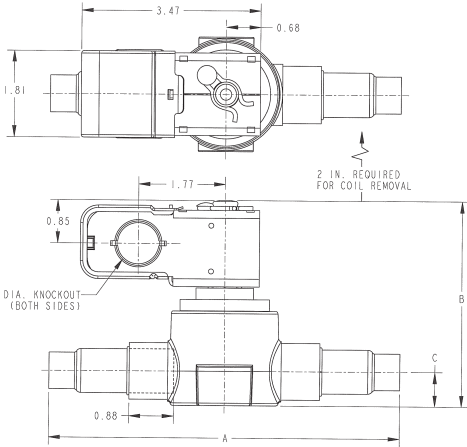
With Extended Ends



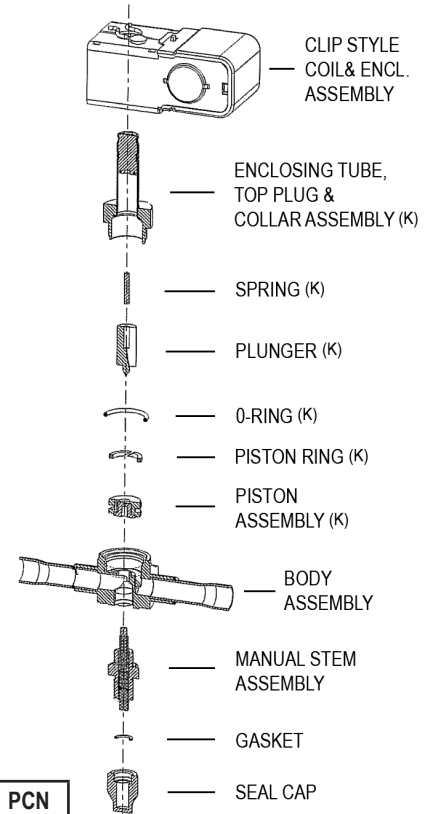
With Extended Ends

Valve	Port Size	Conn. Size & Style	A	B	C			
200RD 2T2	1/8	1/4 ODF	2.42	4.62	0.25			
200RD 2T3		3/8 ODF			0.31			
200RD 3T2	1/4 ODF	0.25						
200RD 3T3	3/8 ODF	0.31						
200RD 3T4	1/4	1/2 ODF	2.50	5.00	0.38			
200RD 4T4		5/8 ODF						
200RD 4T5	5/16	3/8 ODF	2.31	4.62	0.31			
200RD 5T4		1/2 ODF				2.50	5.00	0.38
200RD 5T5		5/8 ODF				3.25	6.50	0.50
200RD 6T4	3/8	1/2 ODF	2.50	5.00	0.38			
200RD 6T5		5/8 ODF				3.25	6.50	0.50

200RD7 & 9 Dimensional Data (in)



Exploded View & Parts Kit Data



Valve	Port Size	Conn. Size & Style	A	B	C
200RD7S5	7/16	5/8 ODF x 7/8 ODM	2.98	3.69	0.53
200RD7T5		5/8 ODF x 5/8 ODF	6.88		
200RD7T7		7/8 ODF x 7/8 ODF	7.13		
200RD9T5	9/16	5/8 ODF x 5/8 ODF	6.88	4.05	0.68
200RD9T6		3/4 ODF x 3/4 ODF	7.38		
200RD9T7		7/8 ODF x 7/8 ODF	7.13		
200RD9T9		1 1/8 ODF x 1 1/8 ODF	8.50		

Valve Kits

Valve	Complete Kit	PCN	Gasket Kit	OCN	Bi-Flow Kit	PCN	Manual Opening Kit	PCN
200RD2	KS30386	066223	KG10025	049190	KS30387	066224	N/A	N/A
200RD3	KS30386	066223	KG10025	049190	KS30387	066224	KS30377	065695
200RD4	KS30386	066223	KG10025	049190	KS30387	066224	KS30117	053959
200RD5								
200RD6								
200RD7	KS30390	066449	KG00002	64262	N/A	N/A	KS30361	064831
200RD9	KS30391	066450	KG00003	064830	N/A	N/A	KS30364	064832

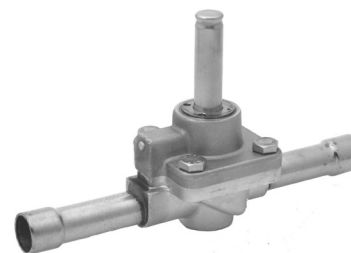
(K) Indicate parts supplied in a complete valve repair kit.

240RA

The 240RA is a 2-way, normally closed diaphragm valve. 240RA valves are used for liquid, suction, and hot gas service.

Features

- One coil fits all valve sizes
- Can be brazed into the line without disassembly
- PTFE diaphragm for high temperature applications
- Extended ends for easy installation (standard)
- Long-life molded coils
- Mounting stud models can be field converted to manual stem



Specifications

- Maximum fluid temperature: 250°F
- Maximum working pressure: 500 psig
- MOPD: 300 psig
- UL/CUL file number: MP604

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

Options

- Manual stem or mounting stud

Nomenclature example: 240RA 8T5M VLC

240R	A**	8	T	5	M	VLC
Valve Series	Design Series	Port Size (in 1/16")	Connection Type T = copper extended ends	Connection Size (in 1/8")	M = manual stem T = mounting stud (optional)	Coil*

* NOTE: Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability.

**NOTE: Letter "H" is no longer used since all 240RA valves now contain the high temperature diaphragm for hot gas.

Ordering Information and Nominal* Liquid Capacity Table – Tons (kW)

Standard Valve	PCN		Description	Connection Size	R-134A	R-450A/ R-513A	R-22	R-407C	R-404A/ R-507	R-448A/ R-449A
	Mounting Stud ¹	Manual Stem ²								
060374	040846	040845	240RA 8 T 5	5/8 ODF	12.1 (42.6)	10.8 (37.8)	15.6 (54.9)	14.8 (52.1)	10.3 (36.2)	15.7 (55.1)
060375	044860	045753	240RA 8 T 7	7/8 ODF						
060376	040848	040847	240RA 9 T 5	5/8 ODF	18.0 (63.3)	16.1 (56.5)	23.3 (81.9)	22.1 (77.2)	15.3 (53.8)	23.4 (82.3)
060377	043205	043204	240RA 9 T 7	7/8 ODF						
060378	044861	045752	240RA 9 T 9	1 1/8 ODF	23.6 (83.0)	21.0 (74.0)	30.5 (107.27)	29.0 (102.0)	20.1 (70.7)	30.6 (107.7)
060379	040850	040849	240RA 12 T 7	7/8 ODF						
060380	043959	045549	240RA 12 T 9	1 1/8 ODF	27.1 (95.3)	24.1 (84.6)	34.9 (122.7)	33.2 (116.8)	23.0 (80.9)	35.0 (123.2)
060381	042549	042548	240RA 16 T 9	1 1/8 ODF						
060382	044428	044788	240RA 16 T 11	1 3/8 ODF	45.0 (158.3)	40.0 (140.6)	58.0 (203.9)	55.2 (194.1)	38.3 (134.7)	58.2 (204.8)
060383	047761	046636	240RA 20 T 11	1 3/8 ODF						
060384	047747	046637	240RA 20 T 13	1 5/8 ODF	70.9 (249.4)	65.8 (231.3)	95.4 (335.5)	90.8 (319.3)	65.7 (231.1)	95.8 (336.8)
060385	054297	046638	240RA 20 T 17	2 1/8 ODF						

¹ Add "T" to the end of description for Mounting Stud

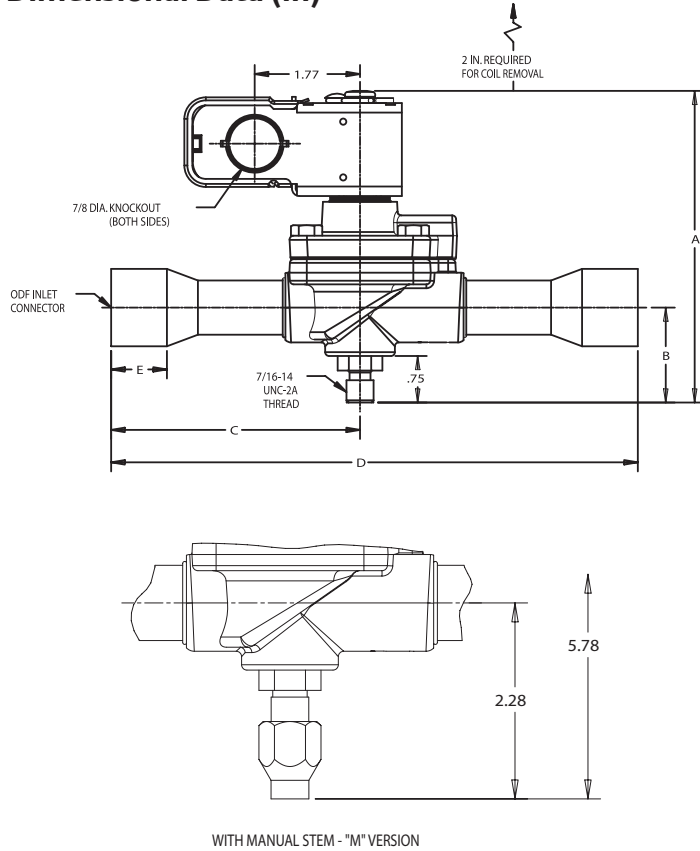
² Add "M" to the end of the description for Manual Stem

Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87.

*See Extended Capacity Tables for ratings at a wide range of conditions.

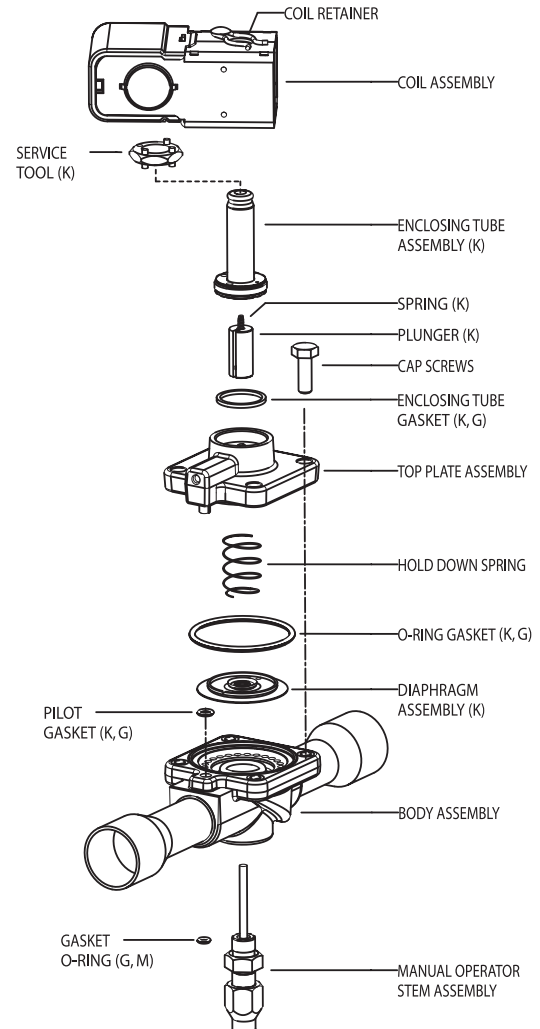
Standard Product Offering

Dimensional Data (in)



Valve	Port Size	Conn. Size	A	B	C	D	E	
240RA8T5T	1/2	5/8 ODF	4.80	1.34	3.28	6.88	0.50	
240RA8T5M			5.28	1.83				
240RA8T7T		7/8 ODF	4.80	1.34	3.41	7.13	0.75	
240RA8T7M	9/16	5/8 ODF	5.28	1.83	3.20	6.88	0.50	
240RA9T5T			5.08	1.50				
240RA9T5M		5.56	2.08	3.33	7.13	0.75		
240RA9T7T		5.08	1.50					
240RA9T7M		1-1/8 ODF	5.56	2.08	4.02	8.50	0.91	
240RA9T9T			5.08	1.50				
240RA9T9M	3/4	7/8 ODF	5.56	2.08	3.52	7.50	0.75	
240RA12T7T			5.08	1.50				
240RA12T7M		5.56	2.08	4.02	8.50	0.91		
240RA12T9T	1-1/8 ODF	5.08	1.50					
240RA12T9M	1	1-1/8 ODF	5.56	2.08	4.13	9.06	0.97	
240RA16T9T			5.34	1.66				
240RA16T9M		1-3/8 ODF	5.80	2.23	5.13	11.06	0.97	
240RA16T11T			5.34	1.66				
240RA16T11M		1-1/4	1-3/8 ODF	5.80	2.23	5.11	10.81	1.09
240RA20T11T				5.45	1.31			
240RA20T11M	6.47		2.33	5.89	12.38	1.09		
240RA20T13T	1-5/8 ODF	5.45	1.31					
240RA20T13M	2-1/8 ODF	6.47	2.33	6.58	13.75	1.34		
240RA20T17T		5.45	1.31					
240RA20T17M		6.47	2.33					

Exploded View & Parts Kit Data



Valve Kits

Valve	Complete Kit	PCN	Manual Opener Kit	PCN
240RA8	KS30321	060626	KS30066	044657
240RA9	KS30322	060627	KS30067	044658
240RA12	KS30323	060628	KS30067	044658
240RA16	KS30324	060629	KS30068	044491
240RA20	KS30325	060630	KS30098	047723

Gasket Kit for all 240RA valves is KG10028 (PCN 054356)

Standard Product Offering

Valve Repair Kit

"K" indicates part is supplied in complete valve repair kit.

Manual Stem Kit

"M" indicates part is supplied in manual stem kit.

Gasket Kit

"G" indicates gasket is supplied in gasket kit.
Note: Spanner wrench (X11981-1 service tool) included in complete valve kit.

Coil Assembly

See coil assemblies for availability.

500RB

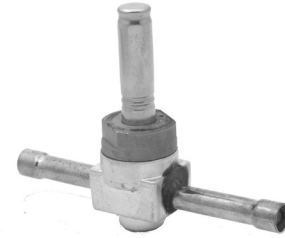
The 500RB is a pilot-operated, 2-way, normally open valve. 500RB valves are used for liquid, suction or discharge gas refrigerant service.

Features

- One coil fits all valve sizes
- Extended ends for easy installation
- Can be positioned in remote locations
- Long-life molded coils
- Low pressure differential required for full opening
- PTFE O-ring for superior external sealing

Options

- Connection types: SAE, ODF, NPTF and ODF inlet with ODM outlet



Specifications

- Maximum fluid temperature: 250°F
- Maximum working pressure: 500 psig
- MOPD: 275 psig
- UL/CUL file number: MP604

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

NOTE: This valve requires a DM, MM or ASC2-Type coil assembly. ASC2-Type Coil requires cable assembly (PCN:059261).

Nomenclature example: 500RB 4T3 VLC

500R	B	4	T	3	VLC
Valve Series	Design Series	Port Size (in 1/16")	Connection Type F = SAE T = ODF (copper extended fittings) P = NPTF S = ODF inlet/ODM outlet	Connection Size (in 1/8")	Coil*

* NOTE: Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability.

Ordering Information and Nominal* Liquid Capacity Table – Tons (kW)

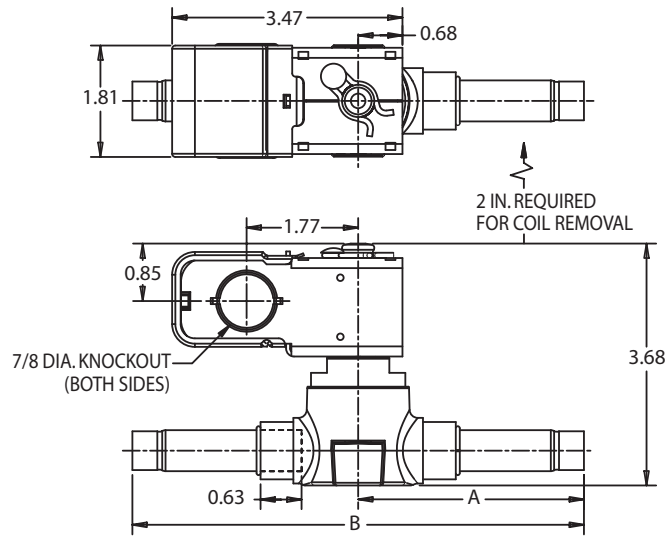
PCN	Description	Connection Size	R-134a	R-450A/R-513A	R-22	R-407C	R-404A/R-507	R-448A/R-449A
063274	500RB 2 F 2	1/4 SAE	2.7 (9.6)	2.5 (8.7)	3.6 (12.7)	3.4 (11.9)	2.3 (8.2)	3.6 (12.7)
063278	500RB 2 T 2	1/4 ODF						
063280	500RB 2 T 3	3/8 ODF						
063286	500RB 3 F 4	1/2 SAE	3.6 (12.7)	3.3 (11.6)	4.8 (16.9)	4.5 (15.9)	3.1 (10.9)	4.8 (17.0)
063288	500RB 3 T 2	1/4 ODF						
063290	500RB 3 T 3	3/8 ODF						
063292	500RB 3 T 4	1/2 ODF						
063294	500RB 4 F 3	3/8 SAE						
063298	500RB 4 P 3	3/8 NPTF	6.0 (21.1)	5.5 (19.3)	8.0 (28.0)	7.5 (26.3)	5.1 (18.0)	8.0 (28.1)
063302	500RB 4 S 4	1/2 ODF x 5/8 ODM						
063304	500RB 4 T 2	1/4 ODF						
063306	500RB 4 T 3	3/8 ODF						
063308	500RB 4 T 4	1/2 ODF						
063310	500RB 4 T 5	5/8 ODF						
063312	500RB 5 F 4	1/2 SAE						
063314	500RB 5 F 5	5/8 SAE						
063316	500RB 5 P 3	3/8 NPTF	6.2 (21.8)	5.7 (19.9)	8.2 (21.8)	7.7 (27.2)	5.3 (18.6)	8.3 (29.0)
063318	500RB 5 S 4	1/2 ODF x 5/8 ODM						
063320	500RB 5 S 5	5/8 ODF						
063322	500RB 5 T 3	3/8 ODF						
063323	500RB 5 T 4	1/2 ODF						
063325	500RB 5 T 5	5/8 ODF	7.2 (25.2)	6.5 (23.0)	9.5 (33.3)	8.9 (31.4)	6.1 (21.5)	9.5 (33.5)
063329	500RB 6 F 5	5/8 SAE						
063331	500RB 6 P 3	3/8 NPTF						
063333	500RB 6 S 4	1/2 ODF x 5/8 ODM						
063335	500RB 6 S 5	5/8 ODF						
063337	500RB 6 T 3	3/8 ODF						
063339	500RB 6 T 4	1/2 ODF	12.7 (44.6)	11.7 (41.2)	17.0 (59.8)	16.2 (57.0)	11.1 (39.0)	17.1 (60.0)
064038	500RB 7 S 5	5/8 ODF x 7/8 ODM						
064064	500RB 7 T 4	1/2 ODF						

Standard Product Offering

Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87.

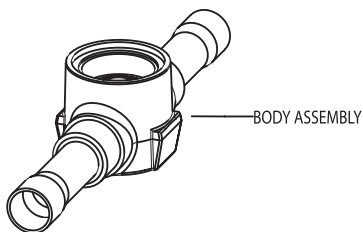
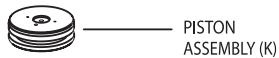
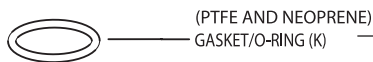
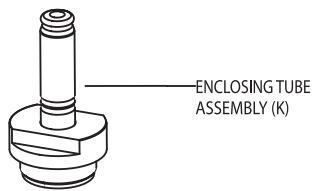
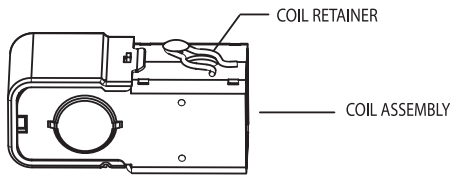
*See Extended Capacity Tables for ratings at a wide range of conditions.

Dimensional Data (in)



*NOTE: Drawing indicates extended copper tube version.

Exploded View & Parts Kit Data



Without Extended Ends

Valve	Port Size	Conn. Size & Style	A	B
500RB 4P3	1/4	3/8 NPTF	-	2.37
500RB 4S4		1/2 ODF X 5/8 ODM	0.56	2.37
500RB 4F3		3/8 SAE (male flare)	-	3.12
500RB 5P3	5/16	3/8 NPTF	0.56	2.37
500RB 5S4		1/2 ODF X 5/8 ODM		2.37
500RB 5S5		5/8 ODF		2.37
500RB 5F4	1/2 SAE (male flare)	-	3.50	
500RB 5F5	5/8 SAE (male flare)	-	3.75	
500RB 6P3	3/8	3/8 NPTF	0.56	2.37
500RB 6S4		1/2 ODF X 5/8 ODM		2.37
500RB 6S5		5/8 ODF		2.37
500RB 6F5	5/8 SAE (male flare)	-	3.75	
500RB 7S5	7/16	5/8 ODF X 7/8 ODM	0.63	2.98

With Extended Ends

Valve	Port Size	Conn. Size & Style	A	B
500RB 2T2	1/8	1/4 ODF	2.42	4.67
500RB 2T3		3/8 ODF		
500RB 3T2	3/16	1/4 ODF	2.42	4.67
500RB 3T3		3/8 ODF		
500RB 3T4		1/2 ODF		
500RB 4T4	1/4	1/2 ODF	2.50	5.00
500RB 4T5		5/8 ODF	3.25	6.50
500RB 5T3	5/16	3/8 ODF	2.31	4.63
500RB 5T4		1/2 ODF	2.50	5.00
500RB 5T5		5/8 ODF	3.25	6.50
500RB 6T3	3/8	3/8 ODF	2.31	4.63
500RB 6T4		1/2 ODF	2.50	5.00

Valve Kits

Valve	Complete Kit	PCN
500RB 2-6	KS-30353	064268
500RB 7	KS-30355	064264

Replace with same gasket color and material; discard other

Gasket Kit

Gasket Kit **KG10025 - PCN 049190**
(contains 12 pieces - each of PTFE and Neoprene O-rings).

Coil Assembly

DM, MM or ASC-Type style only

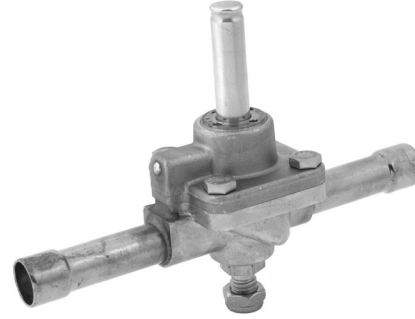
Use MagMax style coil for operation on DC voltage.
No other DC coil may be used.

540RA

The 540RA is a 2-way, normally open diaphragm valve. 540RA valves are used for liquid, suction and hot gas service.

Features

- Can be brazed into the line without disassembly
- PTFE diaphragm
- Extended ends for easy installation
- Long-life molded coils
- Low pressure differential required for full opening



Specifications

- Maximum fluid temperature: 250°F
- Maximum working pressure: 500 psig
- MOPD: 250 psig
- UL/CUL file number: MP604

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

NOTE: This valve requires a DM, MM or ASC2-Type coil assembly. ASC2-Type Coil requires snap cap and cable assembly (PCN:059261).

Nomenclature example: 540RA 8T5 VLC

540R	A	8	T	5	VLC
Valve Series	Design Series	Port Size (in 1/16")	Connection Type T = copper ented ends	Connection Size (in 1/8")	Coil*

* NOTE: Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability.

Ordering Information and Nominal* Liquid Capacity Table – Tons (kW)

PCN		Description	Connection Size	R-134a	R-450A/ R-513A	R-22	R-407C	R-404A/ R-507	R-448A/ R-449A
Standard Valve	Mounting Stud ¹								
	058573	540RA 8 T 4	1/2 ODF	12.1 (42.6)	10.8 (37.8)	15.6 (54.9)	14.8 (52.1)	10.3 (36.2)	15.7 (55.1)
060392	046265	540RA 8 T 5	5/8 ODF						
	046266	540RA 9 T 5	5/8 ODF	18.0 (63.3)	16.1 (56.5)	23.3 (81.9)	22.1 (77.2)	15.3 (53.8)	23.4 (82.3)
060395	046268	540RA 9 T 7	7/8 ODF						
060396	047497	540RA 9 T 9	1 1/8 ODF	23.6 (83.0)	21.0 (74.0)	30.5 (107.27)	29.0 (102.0)	20.1 (70.7)	30.6 (107.7)
060397	046269	540RA 12 T 7	7/8 ODF						
060398	047498	540RA 12 T 9	1 1/8 ODF	27.1 (95.3)	24.1 (84.6)	34.9 (122.7)	33.2 (116.8)	23.0 (80.9)	35.0 (123.2)
060399	046270	540RA 16 T 9	1 1/8 ODF						
	047953	540RA 20 T 11	1 3/8 ODF	45.0 (158.3)	40.0 (140.6)	58.0 (203.9)	55.2 (194.1)	38.3 (134.7)	58.2 (204.8)
060402	047954	540RA 20 T 13	1 5/8 ODF						

¹ Add "T" to the end of description for Mounting Stud

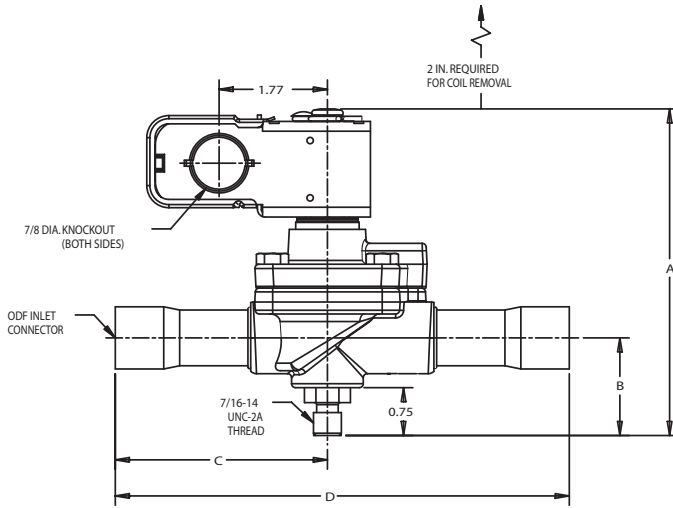
Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87.

*See Extended Capacity Tables for ratings at a wide range of conditions.

Standard Product Offering

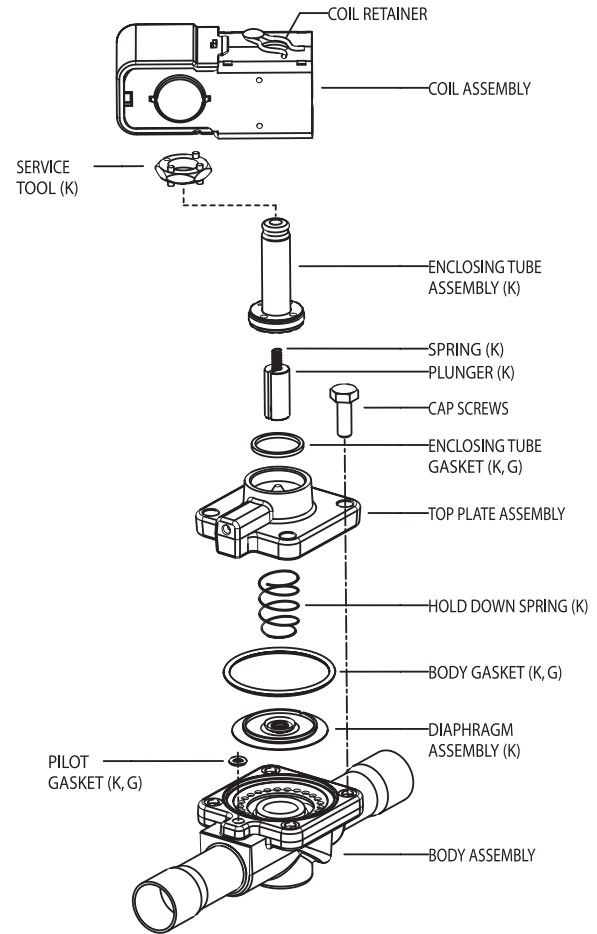
540RA

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls



Valve	Port Size	Conn. Size	A	B	C	D
540RA8T5-T	1/2	5/8 ODF	4.80	1.34	3.28	6.88
540RA9T5-T	9/16	5/8 ODF	5.08	1.50	3.20	6.88
540RA9T7-T		7/8 ODF			3.33	7.13
540RA9T9-T		1 1/8 ODF			4.02	8.50
540RA12T7-T	3/4	7/8 ODF	5.34	1.66	3.52	7.50
540RA12T9-T		1 1/8 ODF			4.02	8.50
540RA16T9-T	1	1 1/8 ODF	5.34	1.66	4.25	9.06
540RA20T11-T	1-1/4	1 3/8 ODF	5.45	1.31	5.11	10.81
540RA20T13-T		1 5/8 ODF			5.89	12.38

Exploded View & Parts Kit Data



Valve Repair Kit

"K" indicates part is supplied in complete valve repair kit.

Gasket Kit

"G" indicates gasket is supplied in gasket kit.

Note: Spanner wrench X11981-1 (PCN 027451) is included in complete valve kit. (service tool used to remove and replace enclosing tube collar)

Coil Assembly

See coil assemblies for availability.

540RA Valve Kits

Valve	Kit #	PCN
540RA8	KS30328	060633
540RA9	KS30329	060634
540RA12	KS30330	060635
540RA16	KS30331	060636
540RA20	KS30332	060637

Gasket Kit for all 540RA valves is KG10028 (PCN 054356)

Standard Product Offering

Coils for Solenoid Valves

Features

- Compact designs
- Coil windings are insulated to provide shock and vibration protection
- ASC2 is designed to provide weather protection
- Interchangeable housings

Voltage Options

- 24V 50/60 Hz
- 120V 50/60 Hz (standard)
- 208-220/208-240V 50/60 Hz
- 480V 50/60 Hz
- 120-240V 50/60 Hz
- 12V D.C. (MM Series recommended)
- 24V D.C. (MM Series recommended)

Nomenclature

Coil Code		
A	M	G
Series	Insulation	Enclosure
A = 12 Watt B = 15 Watt C = 18 Watt D = 7 Watt M = 4 Watt	B or G = Class B M = Class F H = Class H	C = Conduit Connection F = Open Frame Leads G = Junction Box L = Grommet 18" Leads S = Spade Connection

ASC2 – DIN



Requires ASC2 female connector (PCN 059261).

MMG – Special DC



AMC - 1/2" Conduit



AMG - Junction Box



AMS - Open Frame



MAGMAX Coil (Type MM): For Use On DC Applications Only

Voltage	Amperes Holding	Watts Holding
12VDC	0.4	4
24VDC	0.4	4

Solenoid Coil Prefix Selection Table

1) Select Prefix 2) Select Voltage 3) Select PCN

Valve Type	J-Box	Conduit	Leads	Spades	Molded-DIN With Connector
100RB	AMG	AMC	AMF	AMS	ASC2
200RB / 200RD	AMG	AMC	AMF	AMS	ASC2
222CB (Steam)	AHG	AHC	-	-	-
500RB	DMG	-	DMF	DMS	-
540RA	-	-	-	DMS	ASC2
222CB (Water)	AMG	AMC	AMF	AMS	ASC2
Special DC Application	MMG	-	MMF	-	-

* SML is OEM - RMF is Wholesale replacement

Note - All coils NEMA1 except ASC2 NEMA2

AM/EM Coil:

204CD
214CB
211CA
222CB
210CA

Nominal Voltage and Frequency	Applied Voltage and Frequency	204CD		214C		211CA		222CB		210CA	
		Inrush	Holding	Inrush	Holding	Inrush	Holding	Inrush	Holding	Inrush	Holding
24/60	24/60	1.23	0.61	1.17	0.61	0.92	0.61	1.00	0.74	0.92	0.61
120/60	120/60	0.23	0.14	0.22	0.14	0.17	0.14	0.19	0.16	0.17	0.14
240/60	240/60	0.13	0.08	0.12	0.08	0.10	0.08	0.11	0.08	0.10	0.08
480/60	480/60	0.06	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04

See the MM (MAGMAX) Series Coil for DC Applications

Coils for Solenoid Valves

AM Coil: 702RA

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA Holding	Watts Max.	Coil Insulation
		Inrush	Holding			
24-50/60	24/50	1.70	1.00	24	17/12	Class F Molded
24-50/60	24/60	1.41	0.64	15		
120-50/60	120/50	0.38	0.24	29		
120-50/60	120/60	0.32	0.16	19		
208-220/50 208-240/60	208/50	0.17	0.10	21		
208-220/50 208-240/60	208/60	0.15	0.06	13		
208-220/50 208-240/60	220/50	0.20	0.14	33		
208-220/50 208-240/60	240/60	0.22	0.09	22		
480-50/60	480/50	0.10	0.07	33		
480-50/60	480/60	0.09	0.04	22		

See the MM (MAGMAX) Series Coil for DC Applications

AM Coil: 100RB 240RA 710/713RA

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA	Watts Max.	Coil Insulation
		Inrush	Holding	Holding		
24-50/60	24/50	1.20	.96	23	17/12	Class F Molded
24-50/60	24/60	1.0	.74	18		
120-50/60	120/50	.25	.21	25		
120-50/60	120/60	.19	.16	19		
208-220/50 208-240/60	208/50	.14	.08	17		
208-220/50 208-240/60	208/60	.12	.06	12		
208-220/50 208-240/60	220/50	.16	.10	24		
208-220/50 208-240/60	240/60	.13	.08	19		
480-50/60	480/50	.06	.05	24		
480-50/60	480/60	.05	.04	19		

See the MM (MAGMAX) Series Coil for DC Applications

AM Coil: 200RB/200RD

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA Holding	Watts Max.	Coil Insulation
		Inrush	Holding			
24-50/60	24/50	2.00	.96	23	17/12	Class F Molded
24-50/60	24/60	1.6	.74	18		
120-50/60	120/50	.45	.21	25		
120-50/60	120/60	.36	.16	19		
208-220/50 208-240/60	208/50	.19	.08	17		
208-220/50 208-240/60	208/60	.15	.06	12		
208-220/50 208-240/60	220/50	.24	.10	24		
208-220/50 208-240/60	240/60	.19	.08	19		
480-50/60	480/50	.11	.05	24		
480-50/60	480/60	.09	.04	19		

See the MM (MAGMAX) Series Coil for DC Applications

Coils for Solenoid Valves

ASC2 Coil: 200RB/200RD 540RA

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA Holding	Watts Max.	Coil Insulation
		Inrush	Holding			
24-50/60	24/50	2.18	1.07	26	15/12	Class H Molded
24-50/60	24/60	1.90	.81	19		
120-50/60	120/50	.43	.21	25		
120-50/60	120/60	.38	.16	19		
240-50/60	240/50	.24	.12	30		
240-50/60	240/60	.21	.09	22		

DM Coil: 500RB

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA Holding	Watts Max.	Coil Insulation
		Inrush	Holding			
24-50/60	24/50	1.80	.71	17	17/12	Class F Molded
24-50/60	24/60	1.56	.52	12		
120-50/60	120/50	.36	.14	17		
120-50/60	120/60	.31	.10	12		
240-50/60	240/50	.19	.08	19		
240-50/60	240/60	.17	.06	14		

ASC2 Coil: 100RB 240RA 710/713RA

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA Holding	Watts Max.	Coil Insulation
		Inrush	Holding			
24-50/60	24/50	1.67	1.10	26	15/12	Class H Molded
24-50/60	24/60	1.41	.83	20		
120-50/60	120/50	.31	.22	26		
120-50/60	120/60	.26	.16	20		
240-50/60	240/50	.17	.13	31		
240-50/60	240/60	.15	.10	23		

DM Coil: 100RB 240RA 710/713RA

Nominal Voltage and Frequency	Applied Voltage and Frequency	Amperes		VA Holding	Watts Max.	Coil Insulation
		Inrush	Holding			
24-50/60	24/50	1.21	.72	17	17/12	Class F Molded
24-50/60	24/60	1.02	.52	13		
120-50/60	120/50	.24	.14	17		
120-50/60	120/60	.20	.10	12		
240-50/60	240/50	.13	.08	20		
240-50/60	240/60	.11	.06	14		

Coils for Solenoid Valves

Ordering Information

AMG - Junction Box



6" Leads

AMC - 1/2" Conduit



18" Leads

AMS - Open Frame



18" Leads or
1.4" Spades

Voltage/ Frequency	Description	PCN	Description	PCN	Description	PCN
24V 50/60 Hz	AHG 24V 50/60 Hz	057669	AMC 24V 50/60 Hz	057631	AMF 24V 50/60 Hz	057539
	AMG 24V 50/60 Hz	057341	AHC 24V 50/60 Hz	057736	AMF 24V 50/60 Hz	057538
	--	--	--	--	DMG 24V 50/60 Hz	062013
	DMG 24V 50/60 Hz	055129	--	--	RMF 24V 50/60 Hz	065677
	--	--	--	--	AMS 24V 50/60 Hz	057603
120V 50/60 Hz	AHG 120V 50/60 Hz	057673	AMC 120V 50/60 Hz	057598	RMF 120V 50/60 Hz	065678
	AMG 120V 50/60 Hz	057331	AHC 120V 50/60 Hz	057743	AMS 120V 50/60 Hz	057349
	DMG 120V 50-60 Hz	054762	--	--	RMS 120V 50/60 Hz	065204
208-220/208-240 50/60 Hz	AHG 208-220/208-240 50/60 Hz	057671	--	--	AMF 208-220/208-240 50/60 Hz	057540
	AMG 208-220/208-240 50/60 Hz	057342	AMC 208-220/208-240 50/60 Hz	057594	RMF 208-220/208-240 50/60 Hz	065679
	DMG 208-220/208-240 50/60 Hz	054764	--	--	AMS 208-220/208-240 50/60 Hz	057531
	--	--	--	--	RMS 208-220/208-240 50/60 Hz	065681
480V 50/60 Hz	AMG 480V 50/60 Hz	057527	--	--	AMF 480V 50/60 Hz	057534
120-240V 50/60 Hz	AMG 120-240V 50/60 Hz	057343	AMC 120-240V 50/60 Hz	057730	AMF 120-240V 50/60 Hz	062410
277V 60 Hz	AMG 277V 60 Hz	057528	--	--	AMF 277V 50/60 Hz	057533
	--	--	--	--	AMS 277V 50/60 Hz	057714
12V DC	AMG 12V DC	057521	AMC 12V DC	057596	--	--
24V DC	AMG 24V DC	057523	AMC 24V DC	057633	--	--

Standard Product Offering

ASC2 - DIN



MMG



Voltage/Frequency	Description	PCN	Description	PCN
24V 50/60 Hz	ASC2 24/50-60	062792	--	--
24V 50/60 Hz	ASC2L 24/50-60	063542	--	--
120V 50/60 Hz	ASC2 120/50-60	062462	--	--
120V 50/60 Hz	ASC2 GS-2562-1	015384	--	--
208-220/208-240 50-60 Hz	ASC2 208-240/50-60	062463	--	--
208-220/208-240 50-60 Hz	ASC2 GS-2562-2	015383	--	--
12V DC	--	--	MMG 12V DC	063524
12V DC	--	--	MMF 12V DC	062972
24V DC	ASC2 24V DC	064375	MMG 24V DC	063526

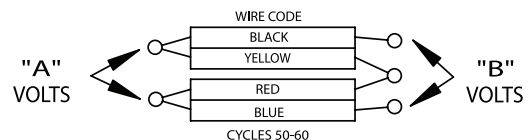
Standard Product Offering

AM and ASC 2 style DC coils should not be used for direct replacements on OEM equipment. The use of this coil on new applications may result in the valve not opening. New applications should use the MM coil because of the significant increase in opening power of the MM Coil over the standard AM and ASC 2 style DC coil.

Coil Enclosure Options

Options	Code
Junction Box	G
Conduit - 18" Leads	C
Open Frame - 18" Leads	F
Open Frame - Spades	S

Dual Voltage Wiring Diagram



A	B
120	240
240	480

Solenoid Multi-Purpose Tool

The Solenoid Multi-Purpose Tool is a magnetic tool that holds key components together as the valve is disassembled. The manual stem adjustment makes it easy to open valves. This tool provides longer life utilizing its spanner wrench which not only makes it easier to service valves, but also protects the enclosing tube from damage.

Features

- Magnet opens a normally closed Emerson solenoid valve that is in the de-energized state
- Incorporates a spanner wrench and drive socket which enable easy disassembly of Emerson solenoid valves 100RB & 240RA/540RA by using a 3/8" socket wrench
- Tool has a manual stem orifice used to manually adjust opening stem
- May reassemble valve with proper torque specifications on collar

Torque Specifications

100RB Series	225 in. lbs.
240RA Series	150 in. lbs.
540RA Series	150 in. lbs.

Ordering Information

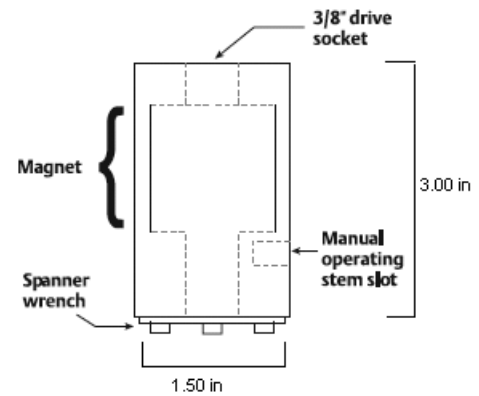
PCN	DESCRIPTION
066019	Solenoid Multi-Purpose Tool



Specifications

- Drive Socket size 3/8"

Dimension Data



Suction Gas Capacities

Tons					
SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP					
VALVE SERIES	Evaporator Temperature - F				
	40	20	0	-20	-40
R-12					
200RB/500RB/200RD 2	0.32	0.30	0.23	0.17	0.10
200RB/500RB/200RD 3	0.44	0.41	0.31	0.23	0.14
200RB/500RB/200RD 4	0.81	0.77	0.59	0.44	0.26
200RB/500RB/200RD 5	0.97	0.93	0.71	0.53	0.32
200RB/500RB/200RD 6	1.05	0.99	0.76	0.56	0.34
200RB/500RB/200RD 7	1.80	1.70	1.30	1.00	0.60
200RB/RD 9	2.05	2.45	1.90	1.40	0.85
240/540RA8	1.00	0.80	0.60	0.50	0.40
240/540RA9T5	1.30	1.10	0.90	0.70	0.50
240/540RA9	1.60	1.30	1.00	0.80	0.60
240/540RA12	2.00	1.60	1.20	1.00	0.70
240/540RA16	3.90	3.20	2.50	1.90	1.50
240/540RA20	5.50	4.50	3.50	2.70	2.10
R-22/R407C					
200RB/500RB/200RD 2	0.34	0.28	0.22	0.18	0.13
200RB/500RB/200RD 3	0.47	0.38	0.31	0.24	0.18
200RB/500RB/200RD 4	0.89	0.73	0.58	0.46	0.34
200RB/500RB/200RD 5	1.08	0.88	0.71	0.55	0.39
200RB/500RB/200RD 6	1.14	0.93	0.75	0.59	0.43
200RB/500RB/200RD 7	1.90	1.00	1.30	1.00	0.76
200RB/RD 9	2.85	2.35	1.91	1.50	1.15
240/540RA8	1.50	1.20	1.00	0.80	0.60
240/540RA9T5	2.00	1.60	1.30	1.00	0.80
240/540RA9	2.40	2.00	1.60	1.20	1.00
240/540RA12	2.90	2.40	1.90	1.50	1.20
240/540RA16	5.80	4.70	3.80	3.00	2.30
240/540RA20	8.20	6.70	5.40	4.20	3.30
R-502					
200RB/500RB/200RD 2	0.28	0.22	0.17	0.13	0.10
200RB/500RB/200RD 3	0.38	0.30	0.24	0.19	0.13
200RB/500RB/200RD 4	0.71	0.57	0.45	0.35	0.26
200RB/500RB/200RD 5	0.86	0.69	0.55	0.42	0.30
200RB/500RB/200RD 6	0.92	0.74	0.58	0.45	0.33
200RB/500RB/200RD 7	1.60	1.30	1.00	0.80	0.60
200RB/RD 9	2.34	1.80	1.50	1.15	0.87
240/540RA8	1.20	1.00	0.80	0.60	0.40
240/540RA9T5	1.60	1.30	1.00	0.80	0.60
240/540RA9	1.90	1.50	1.20	0.90	0.07
240/540RA12	2.30	1.90	1.40	1.10	0.80
240/540RA16	4.60	3.70	2.90	2.30	1.70
240/540RA20	6.50	5.20	4.10	3.20	2.40

NOTE: Capacity is based on largest connection size

Tons					
SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP					
VALVE SERIES	EVAPORATOR TEMPERATURE (°F)				
	0	-10	-20	-30	-40
R-744					
200RD2	0.52	0.49	0.46	0.43	0.39
200RD3	1.07	1.00	0.94	0.87	0.80
200RD4	2.00	1.88	1.76	1.63	1.50
200RD5	2.43	2.29	2.14	1.98	1.82
200RD6	2.56	2.41	2.25	2.09	1.92
200RD7	2.71	2.55	2.39	2.21	2.03
200RD9	6.45	6.08	5.68	5.26	4.83

NOTE: Shading indicates nominal ratings at 20°F Liquid, -20°F Evaporating Temperature, and 25°F Superheat

Tons					
SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP					
VALVE SERIES	Evaporator Temperature - F				
	40	20	0	-20	-40
R-134a					
200RB/500RB/200RD 2	0.26	0.21	0.16	0.11	0.08
200RB/500RB/200RD 3	0.36	0.29	0.21	0.15	0.10
200RB/500RB/200RD 4	0.69	0.54	0.42	0.28	0.16
200RB/500RB/200RD 5	0.83	0.65	0.47	0.34	0.23
200RB/500RB/200RD 6	0.88	0.69	0.52	0.37	0.26
200RB/500RB/200RD 7	1.50	1.20	0.90	0.70	0.50
200RB/RD 9	2.20	1.70	1.35	0.95	0.65
240/540RA8	0.80	0.60	0.50	0.40	0.30
240/540RA9T5	1.40	1.10	0.80	0.60	0.40
240/540RA9	1.70	1.40	1.10	0.80	0.50
240/540RA12	1.90	1.50	1.20	0.90	0.60
240/540RA16	3.20	2.50	1.90	1.40	1.00
240/540RA20	4.40	3.50	2.70	2.00	1.60
R-450A/R-513A					
200RB/500RB/200RD 2	0.24	0.19	0.15	0.11	0.08
200RB/500RB/200RD 3	0.33	0.27	0.20	0.15	0.11
200RB/500RB/200RD 4	0.62	0.50	0.39	0.29	0.21
200RB/500RB/200RD 5	0.76	0.61	0.47	0.35	0.26
200RB/500RB/200RD 6	0.80	0.64	0.50	0.37	0.27
200RB/500RB/200RD 7	1.33	1.07	0.83	0.62	0.45
200RB/RD 9	1.99	1.61	1.24	0.93	0.67
240/540RA8	1.05	0.85	0.65	0.49	0.35
240/540RA9T5	1.40	1.13	0.87	0.65	0.47
240/540RA9	1.68	1.35	1.04	0.78	0.57
240/540RA12	2.03	1.64	1.26	0.94	0.69
240/540RA16	4.06	3.27	2.52	1.89	1.37
240/540RA20	5.74	4.63	3.56	2.67	1.94
R-404A/R-507					
200RB/500RB/200RD 2	0.29	0.23	0.18	0.14	0.10
200RB/500RB/200RD 3	0.39	0.31	0.24	0.19	0.13
200RB/500RB/200RD 4	0.74	0.54	0.46	0.35	0.26
200RB/500RB/200RD 5	0.90	0.71	0.56	0.42	0.30
200RB/500RB/200RD 6	0.95	0.76	0.59	0.45	0.32
200RB/500RB/200RD 7	1.70	1.30	1.00	0.80	0.60
200RB/RD 9	2.40	1.90	1.50	1.10	0.85
240/540RA8	0.90	0.70	0.50	0.40	0.30
240/540RA9T5	1.50	1.20	0.90	0.70	0.50
240/540RA9	1.90	1.50	1.20	0.90	0.60
240/540RA12	2.20	1.80	1.40	1.00	0.80
240/540RA16	3.40	2.70	2.10	1.60	1.20
240/540RA20	4.80	3.80	2.90	2.20	1.60
R-410A					
200RD 2	0.28	0.22	0.20	0.21	0.16
200RD 3	0.57	0.46	0.37	0.29	0.23
200RD 4	1.07	0.88	0.70	0.55	0.43
200RD 5	1.30	1.06	0.85	0.67	0.51
200RD 6	1.37	1.12	0.90	0.72	0.55
200RD 7	2.40	2.00	1.60	1.20	1.00
200RD 9	3.45	2.87	2.30	1.80	1.39
R-448A/R-449A					
200RB/500RB/200RD 2	0.32	0.30	0.25	0.19	0.15
200RB/500RB/200RD 3	0.44	0.42	0.34	0.27	0.21
200RB/500RB/200RD 4	0.82	0.80	0.65	0.51	0.40
200RB/500RB/200RD 5	1.00	0.97	0.79	0.61	0.48
200RB/500RB/200RD 6	1.06	1.02	0.83	0.65	0.51
200RB/500RB/200RD 7	1.76	1.70	1.38	1.08	0.85
200RB/RD 9	2.64	2.55	2.07	1.62	1.27
240/540RA8	1.39	1.34	1.09	0.85	0.67
240/540RA9T5	1.85	1.79	1.46	1.14	0.89
240/540RA9	2.22	2.15	1.75	1.36	1.07
240/540RA12	2.69	2.59	2.11	1.65	1.30
240/540RA16	5.37	5.19	4.22	3.30	2.59
240/540RA20	7.60	7.33	5.97	4.66	3.66

Liquid Capacities

Tons				
LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-12				
100RB	0.80	1.00	1.16	1.20
200RB/500RB/200RD 2	2.28	2.80	3.23	3.61
200RB/500RB/200RD 3	3.04	3.72	4.30	4.80
200RB/500RB/200RD 4	4.95	6.17	7.12	7.97
200RB/500RB/200RD 5	5.20	6.38	7.37	8.24
200RB/500RB/200RD 6	6.01	7.36	8.50	9.50
200RB/500RB/200RD 7	10.75	13.05	15.10	17.05
200RB/RD 9	18.65	23.15	26.05	30.15
240/540RA8	10.00	12.20	14.10	15.80
240/540RA9T (5/8)	14.90	18.20	21.10	23.60
240/540RA9T (7/8, 1 1/8)	19.60	24.00	27.70	31.00
240/540RA12	22.50	27.60	31.80	35.60
240/540RA16	10.00	12.20	14.10	15.80
240/540RA20	14.90	18.20	21.10	23.60
R-22				
100RB	1.04	1.27	1.47	1.64
200RB/500RB/200RD 2	2.94	3.60	4.16	4.65
200RB/500RB/200RD 3	3.92	4.80	5.54	6.19
200RB/500RB/200RD 4	6.49	7.95	9.18	10.26
200RB/500RB/200RD 5	6.71	8.22	9.49	10.61
200RB/500RB/200RD 6	7.74	9.48	10.95	12.24
200RB/500RB/200RD 7	13.50	17.00	18.75	27.85
200RB/RD 9	23.60	29.50	34.10	38.15
240/540RA8	12.70	15.60	18.00	20.10
240/540RA9T (5/8)	19.00	23.30	26.90	30.10
240/540RA9T (7/8, 1 1/8)	24.90	30.50	35.20	39.40
240/540RA12	28.50	34.90	40.30	45.10
240/540RA16	47.40	58.00	67.00	74.90
240/540RA20	77.90	95.40	110.20	123.20
R-502				
100RB	0.70	0.83	1.00	1.10
200RB/500RB/200RD 2	1.93	2.36	2.73	3.05
200RB/500RB/200RD 3	2.57	3.14	3.63	4.06
200RB/500RB/200RD 4	4.15	5.21	6.02	6.73
200RB/500RB/200RD 5	4.50	5.39	6.22	6.69
200RB/500RB/200RD 6	5.08	6.22	7.18	8.03
200RB/500RB/200RD 7	9.22	11.29	13.04	14.57
200RB/RD 9	15.80	19.45	22.15	25.35
240/540RA8	8.20	10.10	11.70	13.00
240/540RA9T (5/8)	12.30	15.10	17.40	19.50
240/540RA9T (7/8, 1 1/8)	16.20	19.80	22.90	25.60
240/540RA12	18.50	22.70	26.20	29.30
240/540RA16	30.80	37.70	43.50	48.70
240/540RA20	50.60	62.00	71.60	80.00

NOTE: Shading indicates ARI standard ratings
All liquid capacities are based on 40°F Evaporator Temperature and 100°F Liquid Temperature.
Capacity is based on largest connection size.

Tons						
LIQUID CAPACITIES						
Pressure Drop Across Valve - psi						
VALVE SERIES	2	3	4	5	6	7
R-744						
200RD2	4.36	5.34	6.17	6.90	7.56	8.16
200RD3	5.80	7.11	8.21	9.18	10.1	10.86
200RD4	9.62	11.8	13.6	15.2	16.7	18.01
200RD5	9.95	12.2	14.1	15.7	17.2	18.62
200RD6	11.5	14.1	16.2	18.2	19.9	21.49
200RD7	20.1	24.6	28.4	31.8	34.8	37.62
200RD9	36.2	44.3	51.1	57.2	62.6	67.66

NOTE: Shading indicates nominal ratings at 1°F saturation pressure drop across solenoid valve. All liquid capacities are based on 20°F Liquid and -20°F Evaporating Temperature

Tons				
LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-134a				
100RB	0.96	1.20	1.40	1.50
200RB/500RB/200RD 2	2.72	3.33	3.85	4.30
200RB/500RB/200RD 3	3.62	4.44	5.12	5.73
200RB/500RB/200RD 4	6.00	7.35	8.49	9.49
200RB/500RB/200RD 5	6.21	7.60	8.78	9.82
200RB/500RB/200RD 6	7.16	8.77	10.13	11.32
200RB/500RB/200RD 7	12.68	15.93	18.39	20.56
200RB/RD 9	22.50	27.35	32.00	35.65
240/540RA8	12.10	14.80	17.10	19.10
240/540RA9T (5/8)	18.00	22.00	25.50	28.50
240/540RA9T (7/8, 1 1/8)	23.60	28.90	33.40	37.30
240/540RA12	27.10	33.20	38.30	42.80
240/540RA16	45.00	55.10	63.60	71.20
240/540RA20	70.90	86.80	100.30	112.10
R-450A/R-513A				
50RB	0.37	0.46	0.53	0.59
100RB	0.88	1.07	1.24	1.38
200RB/500RB/200RD 2	2.48	3.04	3.51	3.92
200RB/500RB/200RD 3	3.31	4.05	4.68	5.23
200RB/500RB/200RD 4	5.48	6.71	7.75	8.67
200RB/500RB/200RD 5	5.67	6.94	8.02	8.96
200RB/500RB/200RD 6	6.54	8.01	9.24	10.34
200RB/500RB/200RD 7	11.72	14.36	16.58	18.53
200RB/RD 9	20.34	24.91	28.77	32.16
240/540RA8	10.76	13.17	15.21	17.01
240/540RA9T (5/8)	16.07	19.68	22.72	25.40
240/540RA9T (7/8, 1 1/8)	21.03	25.76	29.74	33.25
240/540RA12	24.06	29.47	34.03	38.05
240/540RA16	39.99	48.98	56.56	63.23
240/540RA20	65.78	80.56	93.02	104.00
R-404A/R-507				
100RB	0.70	0.85	1.00	1.10
200RB/500RB/200RD 2	1.90	2.32	2.68	3.00
200RB/500RB/200RD 3	2.52	3.09	3.57	4.00
200RB/500RB/200RD 4	4.18	5.12	5.92	6.61
200RB/500RB/200RD 5	4.33	5.30	6.12	6.84
200RB/500RB/200RD 6	4.99	6.11	7.06	7.89
200RB/500RB/200RD 7	9.06	11.10	12.81	14.33
200RB/RD 9	14.90	18.25	21.05	24.15
240/540RA8	8.40	10.30	11.90	13.30
240/540RA9T (5/8)	12.50	15.30	17.70	19.80
240/540RA9T (7/8, 1 1/8)	16.40	20.10	23.20	25.90
240/540RA12	18.80	23.00	26.60	29.70
240/540RA16	31.30	38.30	44.20	49.40
240/540RA20	53.60	65.70	75.90	84.80
R-407C				
100RB	1.00	1.21	1.40	1.60
200RB/500RB/200RD 2	2.77	3.39	3.91	4.38
200RB/500RB/200RD 3	3.68	4.51	5.21	5.82
200RB/500RB/200RD 4	6.11	7.48	8.64	9.66
200RB/500RB/200RD 5	6.31	7.73	8.93	9.98
200RB/500RB/200RD 6	7.28	8.92	10.30	11.52
200RB/500RB/200RD 7	13.10	16.15	18.65	20.65
200RB/RD 9	22.85	27.95	32.05	36.15
240/540RA8	12.10	14.80	17.10	19.10
240/540RA9T (5/8)	18.00	22.10	25.50	28.50
240/540RA9T (7/8, 1 1/8)	23.70	29.00	33.50	37.40
240/540RA12	27.10	33.20	38.30	42.90
240/540RA16	45.10	55.20	63.70	71.30
240/540RA20	74.10	90.80	104.80	117.20
R-410A				
200RD 2	2.76	3.38	3.90	4.36
200RD 3	3.67	4.50	5.19	5.80
200RD 4	6.09	7.45	8.61	9.62
200RD 5	6.29	7.71	8.90	9.95
200RD 6	7.26	8.89	10.27	11.48
200RD 7	12.20	15.70	18.10	20.10
200RD 9	22.35	27.75	32.05	36.15
200RD 12	23.75	29.10	33.50	37.60

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

Discharge Gas Capacities

Tons						
DISCHARGE GAS CAPACITIES						
Pressure Drop Across Valve - psi						
VALVE SERIES	2	5	10	25	50	100
R-12						
100RB	0.10	0.20	0.30	0.50	0.50	0.50
200RB/500RB/200RD 2	0.35	0.50	0.75	1.05	1.20	1.35
200RB/500RB/200RD 3	0.45	0.75	1.00	1.45	1.75	1.85
200RB/500RB/200RD 4	0.85	1.35	1.95	2.70	3.55	4.25
200RB/500RB/200RD 5	1.05	1.65	2.45	3.30	4.45	5.45
200RB/500RB/200RD 6	1.15	1.75	2.50	3.70	4.80	5.85
200RB/500RB/200RD 7	1.50	2.40	3.30	5.20	6.60	7.20
200RB/RD 9	2.80	4.45	6.55	9.35	11.45	10.95
240/540RA8	1.50	2.40	3.30	5.20	6.60	7.20
240/540RA9T5	2.50	4.00	5.60	8.30	10.40	11.20
240/540RA9	3.20	5.00	7.10	10.10	12.10	11.10
240/540RA12	3.50	5.50	7.80	11.70	14.00	12.40
240/540RA16	5.80	9.10	12.90	18.90	23.60	24.30
240/540RA20	8.10	12.80	18.10	28.20	34.40	33.10
R-22						
100RB	0.20	0.30	0.40	0.60	0.80	1.00
200RB/500RB/200RD 2	0.45	0.75	1.05	1.65	2.10	2.40
200RB/500RB/200RD 3	0.65	1.05	1.45	2.25	2.95	3.35
200RB/500RB/200RD 4	1.25	1.95	2.80	4.05	5.50	7.05
200RB/500RB/200RD 5	1.50	2.45	3.50	4.90	6.75	9.00
200RB/500RB/200RD 6	1.60	2.55	3.60	5.50	7.40	9.45
200RB/500RB/200RD 7	2.10	3.40	4.80	7.80	10.40	12.80
200RB/RD 9	4.05	6.25	9.05	14.45	19.00	22.05
240/540RA8	2.10	3.40	4.80	7.80	10.40	12.80
240/540RA9T5	3.60	5.70	8.10	12.50	16.60	20.40
240/540RA9	4.60	7.20	10.20	15.40	20.00	23.10
240/540RA12	5.10	8.00	11.30	18.10	23.40	26.60
240/540RA16	8.30	13.20	18.70	28.60	37.80	45.63
240/540RA20	11.70	18.40	26.10	43.00	56.10	66.00
R-502						
100RB	0.20	0.20	0.30	0.50	0.70	0.80
200RB/500RB/200RD 2	0.40	0.60	0.85	1.35	1.75	2.00
200RB/500RB/200RD 3	0.55	0.85	1.20	1.80	2.35	2.80
200RB/500RB/200RD 4	1.00	1.60	2.25	3.25	4.40	5.75
200RB/500RB/200RD 5	1.20	1.95	2.75	3.95	5.45	7.30
200RB/500RB/200RD 6	1.30	2.05	2.90	4.40	6.00	7.70
200RB/500RB/200RD 7	1.70	2.70	3.80	6.20	8.30	10.40
200RB/RD 9	3.30	5.20	7.35	11.60	15.45	18.30
240/540RA8	1.70	2.70	3.80	6.20	8.30	10.40
240/540RA9T5	2.90	4.50	6.40	10.00	13.30	16.50
240/540RA9	3.60	5.70	8.10	12.30	16.10	18.80
240/540RA12	4.00	6.40	9.00	14.40	18.70	21.70
240/540RA16	6.60	10.50	14.80	22.80	30.20	37.00
240/540RA20	9.30	14.60	20.70	34.30	45.00	53.70

NOTE: Shading indicates ARI standard ratings. Capacity is based on largest connection size.

Tons					
DISCHARGE GAS CAPACITIES					
Pressure Drop Across Valve - psi					
VALVE SERIES	2	5	10	25	50
R-744					
200RD2	0.80	1.26	1.77	2.74	3.73
200RD3	1.16	1.83	2.57	3.98	5.43
200RD4	2.18	3.43	4.82	7.46	10.18
200RD5	2.69	4.23	5.95	9.21	12.6
200RD6	2.91	4.58	6.43	9.95	13.6
200RD7	3.34	5.26	7.39	11.4	15.6
200RD9	7.12	11.2	15.7	24.4	33.3

NOTE: Shading indicates nominal ratings based on 30°F Condensing with 50°F Superheat at compressor discharge, 20°F Liquid, -20°F Evaporator and 25°F Superheat at compressor suction.

Tons						
DISCHARGE GAS CAPACITIES						
Pressure Drop Across Valve - psi						
VALVE SERIES	2	5	10	25	50	100
R-134a						
100RB	0.16	0.22	0.35	0.47	0.57	0.64
200RB/500RB/200RD 2	0.40	0.65	0.90	1.30	1.55	1.40
200RB/500RB/200RD 3	0.55	0.85	1.20	1.75	2.15	2.05
200RB/500RB/200RD 4	1.00	1.65	2.30	3.25	4.30	5.20
200RB/500RB/200RD 5	1.25	2.00	2.85	4.00	5.40	6.85
200RB/500RB/200RD 6	1.35	2.15	3.00	4.45	5.80	6.95
200RB/500RB/200RD 7	1.80	2.80	4.00	6.20	8.00	8.90
200RB/RD 9	3.40	5.30	7.60	11.45	14.15	15.25
240/540RA8	1.80	2.80	4.00	6.20	8.00	8.90
240/540RA9T5	3.00	4.70	6.70	10.00	12.70	13.90
240/540RA9	3.80	6.00	8.50	12.20	14.80	14.20
240/540RA12	4.20	6.60	9.40	14.20	17.10	15.90
240/540RA16	6.90	10.90	15.40	22.80	28.60	30.40
240/540RA20	9.70	15.30	21.60	34.00	41.90	41.90
R-450A/R-513A						
100RB	0.13	0.20	0.28	0.41	0.51	0.53
200RB/500RB/200RD 2	0.29	0.46	0.63	0.93	1.16	1.18
200RB/500RB/200RD 3	0.42	0.66	0.92	1.35	1.67	1.71
200RB/500RB/200RD 4	0.82	1.27	1.76	2.59	3.22	3.28
200RB/500RB/200RD 5	0.98	1.53	2.11	3.11	3.86	3.94
200RB/500RB/200RD 6	1.04	1.63	2.25	3.32	4.12	4.20
200RB/500RB/200RD 7	1.37	2.14	2.96	4.36	5.41	5.52
200RB/200RD 9	2.64	4.12	5.70	8.40	10.43	10.64
240/540RA8	1.37	2.14	2.96	4.36	5.41	5.52
240/540RA9T5	2.35	3.67	5.07	7.47	9.27	9.46
240/540RA9	3.00	4.68	6.48	9.54	11.84	12.09
240/540RA12	3.33	5.19	7.18	10.58	13.13	13.40
240/540RA16	5.42	8.45	11.69	17.21	21.37	21.81
240/540RA20	7.63	11.91	16.47	24.27	30.12	30.75
R-404A/R-507						
100RB	0.20	0.30	0.40	0.60	0.70	0.85
200RB/500RB/200RD 2	0.45	0.70	1.00	1.50	1.95	2.25
200RB/500RB/200RD 3	0.60	0.95	1.30	2.00	2.65	3.15
200RB/500RB/200RD 4	1.10	1.75	2.50	3.65	4.95	6.45
200RB/500RB/200RD 5	1.35	2.05	3.00	4.35	5.80	8.15
200RB/500RB/200RD 6	1.45	2.20	3.15	4.45	6.00	8.67
200RB/500RB/200RD 7	1.80	2.90	4.10	5.70	8.90	11.30
200RB/RD 9	3.55	5.75	8.15	13.20	17.30	20.95
240/540RA8	1.80	2.90	4.10	6.70	8.90	11.30
240/540RA9T5	3.10	4.90	6.90	10.70	14.30	17.90
240/540RA9	3.90	6.20	8.70	13.30	17.40	20.20
240/540RA12	4.30	6.80	9.60	15.50	20.30	23.90
240/540RA16	7.10	11.30	16.00	23.60	30.80	36.20
240/540RA20	9.90	15.70	22.20	36.90	48.70	58.90
R-407C						
100RB	0.20	0.30	0.40	0.60	0.80	1.00
200RB/500RB/200RD 2	0.45	0.70	0.95	1.45	1.90	2.25
200RB/500RB/200RD 3	0.60	0.90	1.25	1.95	2.55	3.05
200RB/500RB/200RD 4	1.05	1.70	2.40	3.50	4.75	6.20
200RB/500RB/200RD 5	1.30	2.10	3.00	4.20	5.80	7.85
200RB/500RB/200RD 6	1.40	2.20	3.10	4.75	7.55	8.35
200RB/500RB/200RD 7	2.10	3.30	4.70	7.70	10.30	13.00
200RB/RD 9	3.50	5.50	7.80	12.55	16.70	20.15
240/540RA8	2.10	3.30	4.70	7.70	10.30	13.00
240/540RA9T5	3.60	5.60	8.00	12.40	16.50	20.60
240/540RA9	4.50	7.10	10.10	15.30	20.00	22.50
240/540RA12	6.00	9.50	13.40	21.20	29.60	37.10
240/540RA16	8.20	13.00	18.40	28.40	37.70	46.20
240/540RA20	11.50	18.20	25.70	42.70	56.10	67.20
R-410A						
200RD 2	0.55	0.90	1.30	2.05	2.75	3.40
200RD 3	0.80	1.25	1.75	2.80	3.75	4.70
200RD 4	1.50	2.40	3.35	5.35	6.80	9.10
200RD 5	1.85	2.95	4.25	6.75	8.30	11.30
200RD 6	2.00	3.10	4.35	6.85	9.25	12.25
200RD 7	2.30	3.55	5.00	7.80	9.80	13.00
200RD 9	4.90	7.80	11.05	17.60	24.15	30.60
R-448A/R-449A						
100RB	0.23	0.36	0.51	0.78	1.04	1.31
200RB/500RB/200RD 2	0.52	0.81	1.14	1.75	2.34	2.96
200RB/500RB/200RD 3	0.75	1.17	1.64	2.52	3.39	4.27
200RB/500RB/200RD 4	1.44	2.26	3.16	4.85	6.51	8.21
200RB/500RB/200RD 5	1.72	2.71	3.80	5.82	7.81	9.86
200RB/500RB/200RD 6	1.84	2.89	4.05	6.21	8.33	10.51
200RB/500RB/200RD 7	2.41	3.79	5.31	8.15	10.94	13.80
200RB/200RD 9	4.66	7.32	10.25	15.72	21.10	26.61
240/540RA8	2.41	3.79	5.31	8.15	10.94	13.80
240/540RA9T5	4.14	6.51	9.11	13.97	18.75	23.66
240/540RA9	5.29	8.31	11.64	17.86	23.96	30.23
240/540RA12	5.86	9.22	12.91	19.80	26.56	33.51
240/540RA16	9.54	15.00	21.00	32.22	43.23	54.54
240/540RA20	13.45	21.14	29.61	45.42	60.94	76.89

NOTE: Shading indicates ARI standard ratings

Our Industrial Solenoid Valves are approved for use with the fluids utilized in secondary loops such as Ethylene and Propylene Glycol and Tyfoxit. The recommended seat material is Buna-N.

In addition to air, water and steam, the following is a listing of secondary loop fluids that are compatible with our valves:

These valves referenced above are as follows:

202CB	211CA
203CA	214CA
204CD	222CB
210CA	314UB

Fluid Name	Manufacturer
Ethylene & Propylene Glycol	Various
Tyfoxit	Spauschus Associates (Distributor)
Siltherm XLT	DOW
HFE	3M
Dowfrost	Dow
Pekasol	Unknown
Dynalene	Dynalene

When ordering valves for the above stated application, be sure to mention the Elastomer Code "B" which designates Buna-N.

Nomenclature example: 222CB 1/2 B 1/2 B

2	22	C	B	1/2	B	1/2	B
Valve Type 2 = 2 Way 3 = 3 Way	Product Group Two digits to Define Group	Form of Flow C = Normally Closed O = Normally Open U = Universal	Design Series Letter will be advanced to identify product changes	Pipe N.P.T. 1/8" thru 2" GS indicates non-standard	Body Material B = Brass S = Stainless Steel T = Stainless Steel with Silver Shading Band	Body Orifice 3/65" thru 2"	Elastomer Code B = Buna-N

202CB

The 202CB is a direct-acting, normally closed valve for control of air, water, and steam applications.

Features

- Superior life with stainless steel enclosing tube
- Repair kits available

Options

- Brass or stainless steel bodies
- Optional Voltages: 12 or 24 VDC & 120-240, 480 & 240-480/50-60 Hz



Specifications

- 1/8" NPT Solenoid Valve
- Watts: 12 A.C., 15 D.C.
- VA Inrush: 28
- VA Holding: 19
- Maximum working pressure: 500 psi (1000 psi - 3/64" orifice only)
- Weight: 1 lb
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- UL/CUL file number: MP604

Ordering Information*

Pipe Size	Orifice Size	M.O.P.D ²		Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC	DC			Size	Insulation	Enclosure			
Brass General Purpose											
1/8	3/64	500	500	0.05	180°F	A 12 Watts AC 15 Watts DC	M Class F Molded	G Junction Box	202CB1/8B3/64B		BUNA-N
	1/16	500	500	0.12					202CB1/8B1/16B		
	3/32	300	125	0.22					202CB1/8B3/32B		
	1/8	150	75	0.34					202CB1/8B1/8B	030113	
	5/32	100	40	0.48					202CB1/8B5/32B	030114	
Stainless Steel General Purpose											
1/8	3/64	500	500	0.05	180°F	A 12 Watts AC 15 Watts DC	M Class F Molded	G Junction Box	202CB1/8S3/64B		BUNA-N
	1/16	500	500	0.12					202CB1/8S1/16B	064756	
	3/32	300	125	0.22					202CB1/8S3/32B		
	1/8	150	75	0.34					202CB1/8S1/8B		
	5/32	100	40	0.48					202CB1/8S5/32B		
Brass Steam											
1/8	1/16	150	-	0.12	400°F	A 12 Watts	H Class H Molded	G Junction Box	202CB1/8B1/16T		PTFE w/Ethylene Propylene Gaskets
	3/32	150	-	0.22					202CB1/8B3/32T		
	1/8	150	-	0.34					202CB1/8B1/8T	030123	
	5/32	100	-	0.48					202CB1/8B5/32T		
1/8	1/8	150	-	0.34	400°F	A 12 Watts	H Class H Molded	G Junction Box	202CB1/8B1/8P	030118	Ethylene Prop.
1/8	5/32	100	-	0.48	400°F	A 12 Watts	H Class H Molded	G Junction Box	202CB1/8B5/32V	056954	Viton w/ Ethylene Propylene Gasket

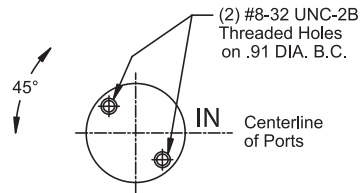
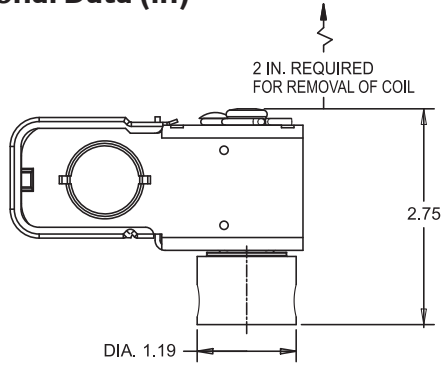
¹With an ambient temperature of 77°F.

²Maximum Operating Pressure Differential.

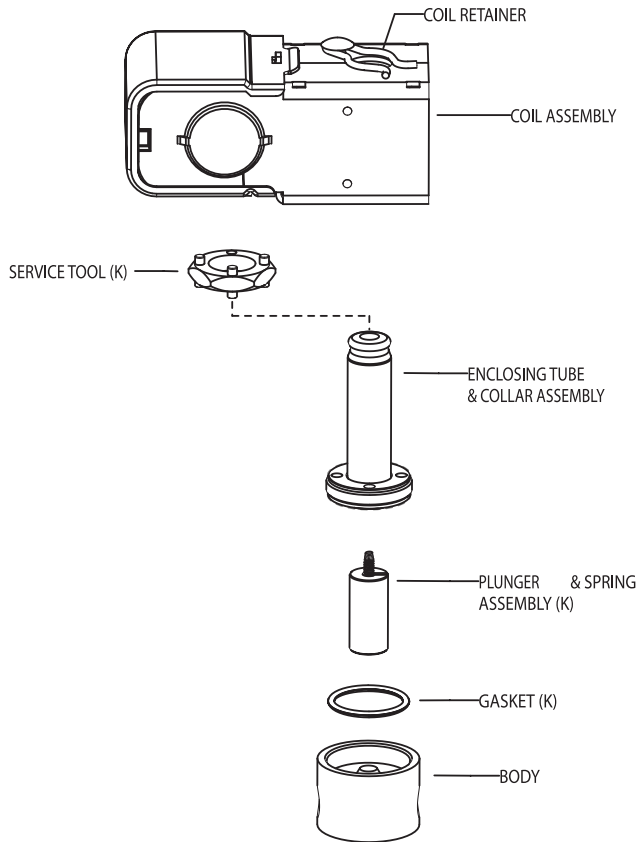
*VLC - See coil assemblies for availability.

Standard Product Offering

Dimensional Data (in)



Exploded View



Valve Repair Kit

"K" indicates part is supplied in valve repair kit.

Coil Assembly

See coil assemblies for availability..

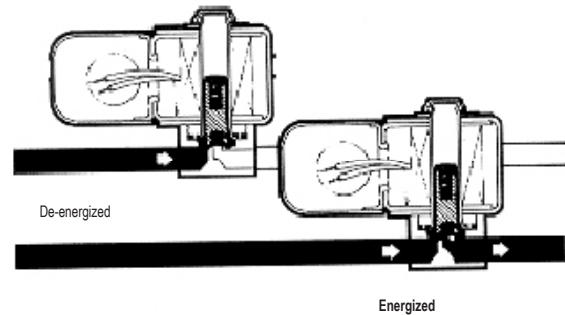
Valve Options

Options	To Order
Manual Override (not for steam) Minimum order qty. 100	Add suffix "M" to catalog number.
Adjustable Metering (not for steam) 500 psi SWP for All orifice sizes.	Add suffix "A" to catalog number.
Silver Shading Band (on stainless steel valves)	Change body material code. Example: Change standard 202CB1/8S to non-standard 202CB1/8T (silver shading band)

Valve Repair Kits

Seat Material	Kit #	PCN
Buna-N	K-1063	066046
Viton	K-1065	066043
Rulon	K-1068	032396
Ethylene Propylene	K-1064	021104

Standard Product Offering



203CA

The 203CA is a direct-acting, 2-way normally closed valve for air, water and steam applications.

Features

- Superior life with stainless steel enclosing tubes
- Forged brass body with large wrench flats
- Repair kits available



Options

- Optional Voltages: 120-240, 480 & 240-480/50-60 Hz

Specification:

- 3/8" NPT Solenoid Valve
- Watts: 12 A.C.
- VA Inrush: 37 for 5/32 & 1/8 orifices
47 for 1/4 + orifices
- VA Holding: 19
- Maximum working pressure: 500 psi
- Weight: 1 lb. 4 oz.
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- UL/CUL file number: MP604

Ordering Information*

Pipe Size	Orifice Size	M.O.P.D ²	Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC			Size	Insulation	Enclosure			
Brass General Purpose										
3/8	1/8	125	0.3	180°F	A 12 Watts AC	M Class F Molded	G Junction Box	203CA3/8B1/8B		BUNA-N
	5/32	75	0.5					203CA3/8B5/32B		
	1/4	25	1.0					203CA3/8B1/4B	030603	
	5/16	15	1.5					203CA3/8B5/16B		
	3/8	10	1.7					203CA3/8B3/8B	030605	
Stainless Steel General Purpose										
3/8	1/4	15	1.0	250°F	A 12 Watts AC	M Class F Molded	G Junction Box	203CA3/8B1/4P		Ethylene Propylene Gaskets
	5/16	15	1.5					203CA3/8B5/16P		
	3/8	10	1.7					203CA3/8B3/8P	030614	

¹With an ambient temperature of 77°F.

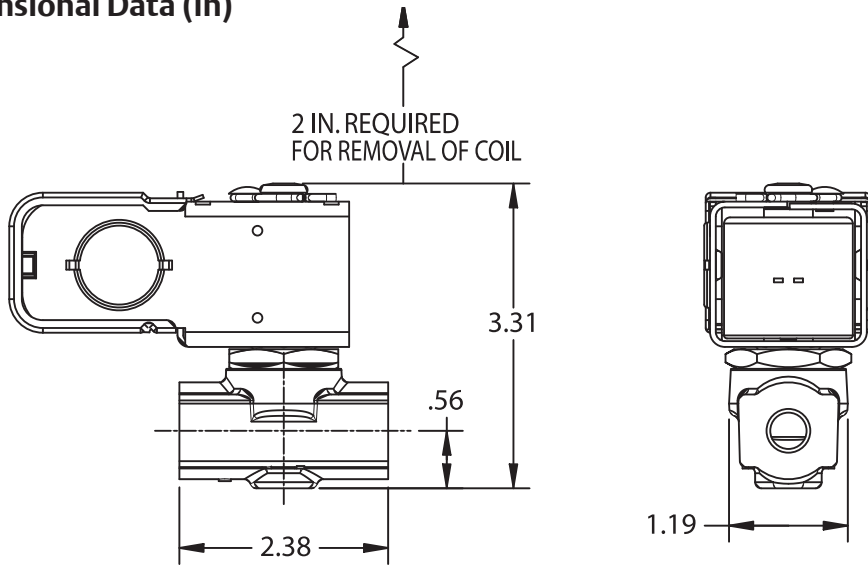
²Maximum Operating Pressure Differential.

*VLC - See coil assemblies for availability.

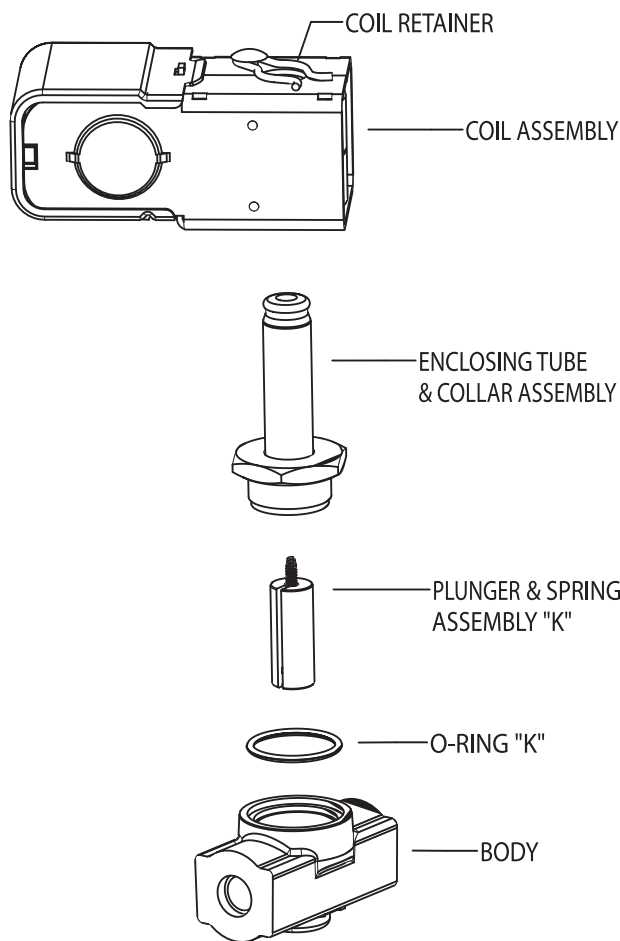
Standard Product Offering

203CA

Dimensional Data (in)



Exploded View



Valve Repair Kits

Orifice Size	Seat Material	Kit #	PCN
1/4, 5/16, 3/8	Buna-N	K-1104	021108
	Ethylene Propylene	K-1106	040598

Standard Product Offering

Valve Repair Kit

"K" indicates part is supplied in valve repair kit.

Coil Assembly

See coil assemblies for availability.

204CD

The 204CD is a direct-acting unidirectional, normally closed valve for air, water and steam applications.

Features

- Superior life with stainless steel enclosing tubes
- Repair kits available

Options

- Brass or stainless steel bodies
- Optional Voltages: 12 or 24 VDC & 120-240, 480 & 240-480/50-60 Hz



Specifications

- 1/4" NPT Solenoid Valve
- Watts: 12 A.C., 15 D.C.
- VA Inrush: 31
- VA Holding: 19
- Maximum working pressure: 500 psi
- Weight: 1 lb. 3 oz.
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- UL/CUL file number: MP604

Ordering Information*

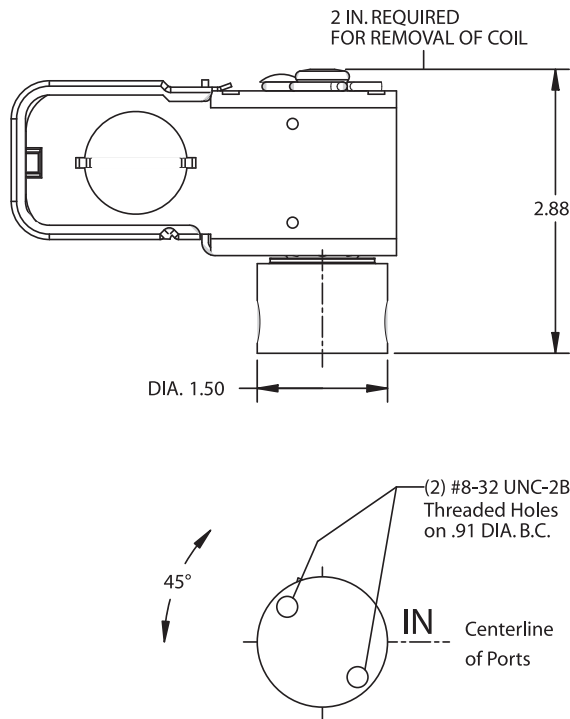
Pipe Size	Orifice Size	M.O.P.D ²		Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC	DC			Size	Insulation	Enclosure			
Brass General Purpose											
1/4	3/64	500	500	0.05	180°F	A 12 Watts AC 15 Watts DC	M Class F Molded	G Junction Box	204CD1/4B3/64B	030731	BUNA-N
	1/16	500	500	0.12					204CD1/4B1/16B	030733	
	3/32	300	125	0.22					204CD1/4B3/32B	030733	
	1/8	150	75	0.34					204CD1/4B1/8B	056110	
	5/32	100	40	0.48					204CD1/4B5/32B	030735	
	3/16	60	30	0.56					204CD1/4B3/16B	030736	
	1/4	20	10	0.70					204CD1/4B1/4B	030737	
Stainless Steel General Purpose											
1/4	3/64	500	500	0.05	180°F	A 12 Watts AC 15 Watts DC	M Class F Molded	G Junction Box	204CD1/4S3/64B		BUNA-N
	1/16	500	500	0.12					204CD1/4S1/16B		
	3/32	300	125	0.22					204CD1/4S3/32B	030870	
	1/8	150	75	0.34					204CD1/4S1/8B	030871	
	5/32	100	40	0.48					204CD1/4S5/32B		
	3/16	60	30	0.56					204CD1/4S3/16B		
	1/4	20	10	0.70					204CD1/4S1/4B	030874	
Brass Steam											
1/4	3/64	150	-	0.05	400°F	A 12 Watts AC A	H Class H Molded M	G Junction Box G	204CD1/4B3/64T		PTFE w/Ethylene Propylene Gaskets
	1/16	150	-	0.12					204CD1/4B1/16T		
	3/32	150	-	0.22					204CD1/4B3/32T	030748	
	1/8	150	-	0.34					204CD1/4B1/8T	030749	
	5/32	100	-	0.48					204CD1/4B5/32T	030750	
	3/16	60	-	0.56					204CD1/4B3/16T		
	1/4	20	-	0.70	250°F	204CD1/4B1/4P		E.P. Seat			
Stainless Steel Steam											
1/4	3/64	150	-	0.05	400°F	A 12 Watts AC A	H Class H Molded M	G Junction Box G	204CD1/4S3/64T	030883	PTFE w/Ethylene Propylene Gaskets
	1/16	150	-	0.12					204CD1/4S1/16T		
	3/32	150	-	0.22					204CD1/4S3/32T		
	1/8	150	-	0.34					204CD1/4S1/8T	030886	
	5/32	100	-	0.48					204CD1/4S5/32T		
	3/16	60	-	0.56					204CD1/4S3/16T	030888	
	1/4	20	-	0.70	250°F	204CD1/4S1/4P		E.P. Seat			
Stainless Steel Steam											
1/4	5/32	100	-	0.48	400°F	A 12 Watts	H Class H Molded	G Junction Box	204CD1/4S5/3P	053492	E.P. Seat
Brass Steam											
1/4	5/32	100	-	0.48	400°F	A 12 Watts	H Class H Molded	G Junction Box	204CD 1/4 B 5/32 P	064682	E.P. Seat

¹With an ambient temperature of 77°F.
²Maximum Operating Pressure Differential.
^{*}VLC - See coil assemblies for availability.

Standard Product Offering

204CD

Dimensional Data (in)



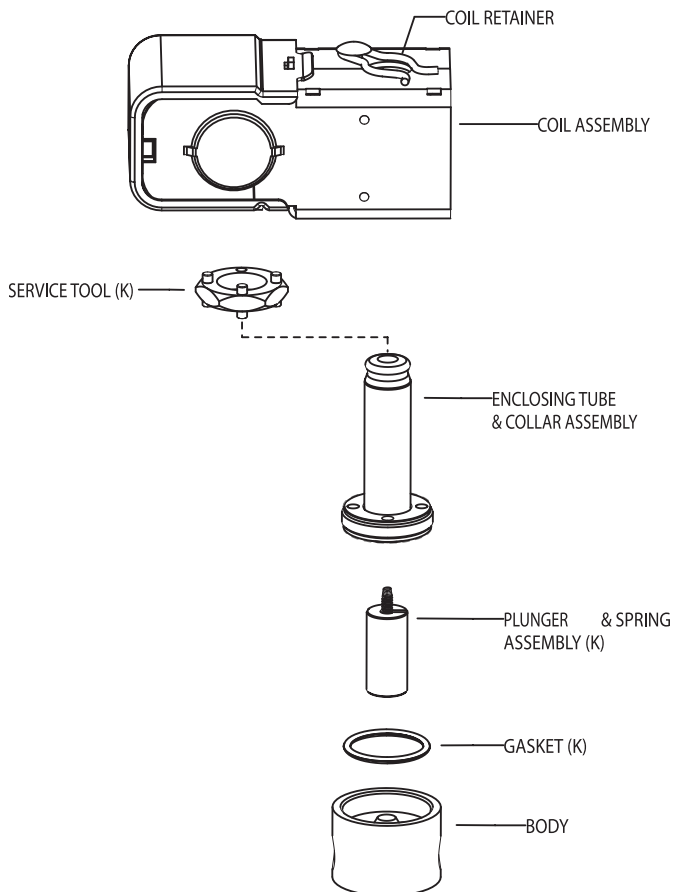
Valve Options

Options	To Order
Manual Override (not for steam) Minimum order qty. 100	Add suffix "M" to catalog number.
Adjustable Metering (not for steam) 500 psi SWP for All orifice sizes.	Add suffix "A" to catalog number.
Silver Shading Band (on stainless steel valves)	Change body material code. Example: Change standard 204CD1/4S to non-standard 204CD1/4T (silver shading band)

Valve Kit Repairs

Seat Material	Kit #	PCN
Buna-N	K-1072	021105
Viton	K-1074	021106
Rulon	K-1077	021107
Ethylene Propylene	K-1076	032154
Buna-N (1/4 orifice only)	K-1162	039145

Exploded View



Valve Repair Kit

"K" indicates part is supplied in valve repair kit.

Coil Assembly

For available coil assemblies, see page 126.

210CA/211CA

The 210CA/211CA is a 2-way normally closed valve used in air, water and steam applications. The 210CA valve is pilot-operated and the 211CA valve is direct-acting.

Features

- Unique captive diaphragm and seal
- Superior life with stainless steel enclosing tube
- Repair kits available

Options

- Optional Voltages: 12 or 24 VDC & 120-240, 480 & 240-480/50-60 Hz



3/8", 1/2", 3/4"



1" Only

Specifications

- Watts: 12 A.C.
- VA Inrush: 31
- VA Holding: 19
- Maximum working pressure: 300 psi (250 psi on 1" 210C only)
- Weight: 1 lb. 3 oz.
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- Diaphragm Operated Solenoid Valve:
 - 210CA - from 5 to 150 psi. 3/8" to 1" NPT
 - 211CA - from 0 to 100 psi. 3/8" to 3/4" NPT
- UL/CUL file number: MP604

210CA Ordering Information*

Pipe Size	Orifice Size	M.O.P.D		Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC				Size	Insulation	Enclosure			
Brass General Purpose											
3/8	5/8	150		2.8	180°F	A 12 Watts AC	M Class F Molded	G Junction Box	210CA3/8B5/8B	030619	BUNA-N
1/2	5/8	150		3.6					210CA1/2B5/8B	030620	
3/4	3/4	125		5.5					210CA3/4B3/4B	030621	
1	1	125		13					210CA1B1B	038629	
Brass-Hot Water (210°F) or Steam (TO 250°)											
3/8	5/8	100 ²	15 ³	2.8	250°F	A 12 Watts AC	M Class F Molded	G Junction Box	210CA3/8B5/8P		Ethylene Propylene
1/2	5/8	100 ²	15 ³	3.6					210CA1/2B5/8P	030623	
3/4	3/4	100 ²	15 ³	5.5					210CA3/4B3/4P	030624	

211CA Ordering Information*

Pipe Size	Orifice Size	M.O.P.D		Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC				Size	Insulation	Enclosure			
Brass General Purpose											
3/8	5/8	100		2.8	180°F	A 12 Watts AC	M Class F Molded	G Junction Box	211CA3/8B5/8B	030625	BUNA-N
1/2	5/8	100		3.6					211CA1/2B5/8B	030626	
3/4	3/4	100		5.5					211CA3/4B3/4B	030627	
Brass-Hot Water (210°F) or Steam (TO 250°)											
3/8	5/8	100 ²	15 ³	2.8	250°F	A 12 Watts AC	M Class F Molded	G Junction Box	211CA3/8B5/8P	032303	Ethylene Propylene
1/2	5/8	100 ²	15 ³	3.6					211CA1/2B5/8P	032304	
3/4	3/4	100 ²	15 ³	5.5					211CA3/4B348P	032305	

¹With an ambient temperature of 77°F.

²MOPD-Hot Water

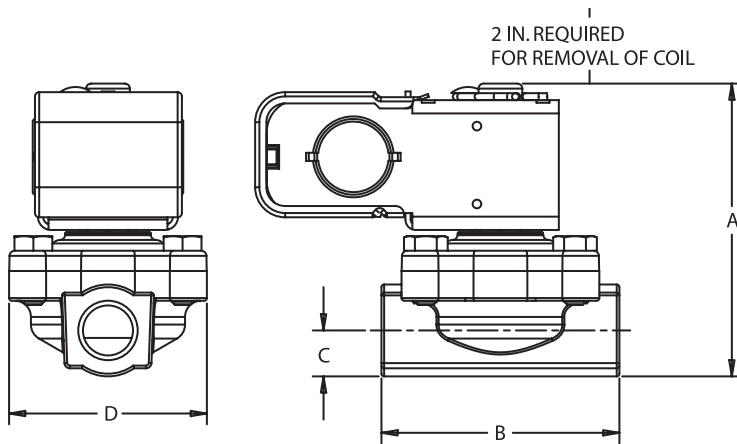
³MOPD-Steam

*VLC - See coil assemblies for availability.

Standard Product Offering

210CA/211CA

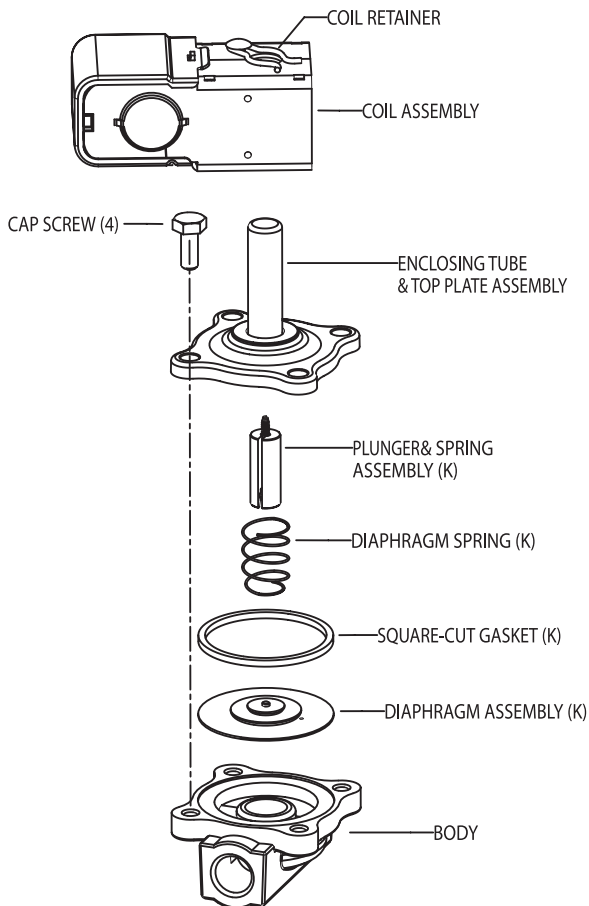
Dimensional Data (in)



Pipe Size	A	B	C	D
3/8	3.56	2.75	0.53	2.29
1/2				
3/4	3.83	2.81	0.66	4.31
1*	4.55	4.16	0.84	

* 1" Pipe available on 210C valve only.

Exploded View



210CA Valve Repair Kits

Seat Material	Connection Size					
	3/8 & 1/2	PCN	3/4	PCN	1	PCN
Buna-N	K-1155	028964	K-1231	045072	K-1177	038934
Ethylene Propylene	K-1156	029856	K-1232	045083		

Standard Product Offering

211CA Valve Repair Kits

Seat Material	Kit #	PCN
Buna-N	K-1157	034357
Ethylene Propylene	K-1158	039879

Standard Product Offering

Valve Repair Kit

"K" indicates part is supplied in valve repair kit.

Coil Assembly

See coil assemblies for availability.

214CB

The 214CB is a 2-way normally closed valve for air, water, and steam applications.

Features

- Superior life with stainless steel enclosing tube
- Forged brass body with large wrench flats
- PTFE O-ring for superior external leakage
- Repair kits available



Options

- Optional Voltages: 480, 120-240 & 240-480/50-60 Hz

Specifications

- 1/4" & 3/8" NPT Solenoids
- Watts: 12 @ 60Hz
- VA Inrush: 44
- VA Holding: 22
- Maximum working pressure: 350 psi
- Weight: 1 lb. 4 oz.
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- Pilot Operated: 2 to 200 P.S.I.
- UL/CUL file number: MP604

Ordering Information*

Pipe Size	Orifice Size	M.O.P.D ²	Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC			Size	Insulation	Enclosure			
Brass General Purpose										
1/4	1/4	200	1.2	180°F	A 12 Watts @ 60 Hz	M Class F Molded	G Junction Box	214CB1/4B1/4B	030540	BUNA-N
	5/16	200	1.6					214CB1/4B5/16B	030541	
	3/8	200	2.2					214CB1/4B3/8B		
3/8	1/4	200	1.2					214CB3/8B1/4B		
	5/16	200	1.6					214CB3/8B5/16B		
	3/8	200	2.2					214CB3/8B3/8B	030545	
3/8	3/8	200	2.2	400°F		Same As Above	214CB 3/8B3/8P	030557	EP Seat	

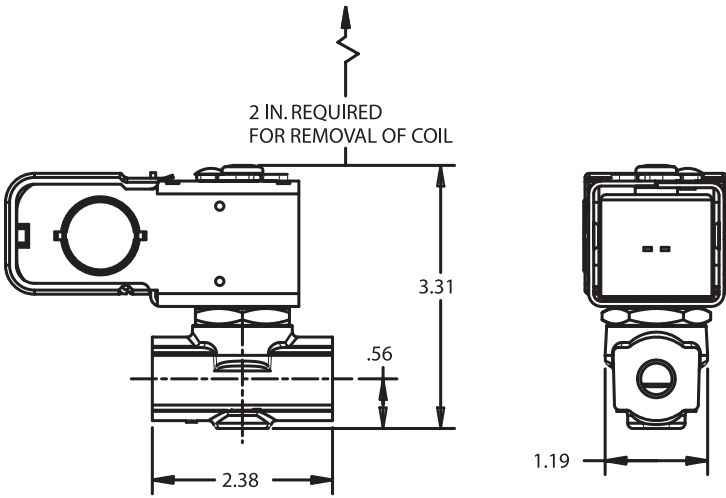
¹With an ambient temperature of 77°F.

²Maximum Operating Pressure Differential.

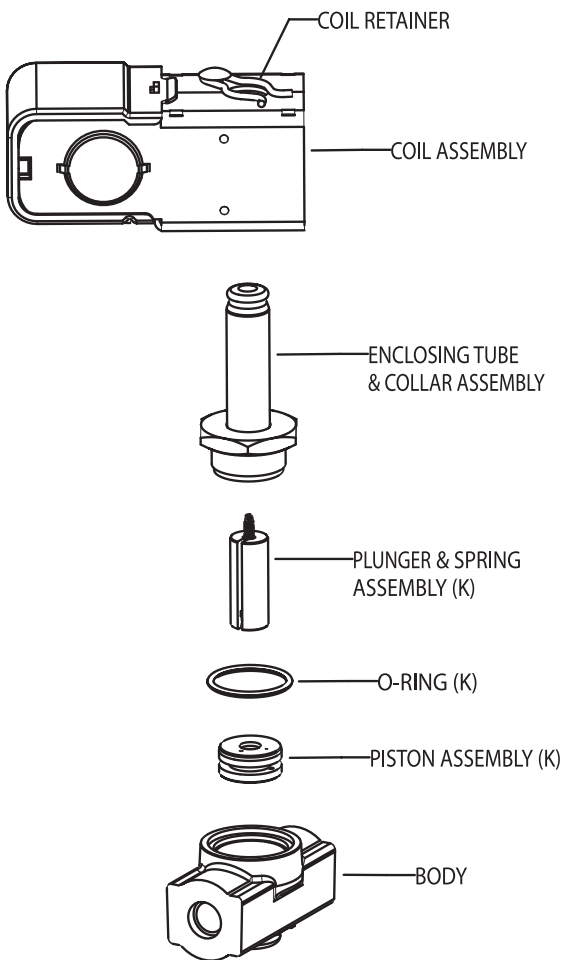
*VLC - See coil assemblies for availability.

Standard Product Offering

Dimensional Data (in)



Exploded View



Valve Repair Kit

Valve Repair "K" indicates part is supplied in valve repair kit.

Coil Assemblies

See coil assemblies for availability.

Valve Options

Options	To Order
Manual Override	Add suffix "M" to catalog number.

Valve Repair Kits

Seat Material	Kit #	PCN
Buna-N	K-1112	035074
Ethylene Propylene	K-1113	041334

Standard Product Offering

222CB

The 222CB is a 2-way normally closed valve for air, water, and steam applications.

Features

- Forged brass body with large wrench flats
- Repair kits available

Options

- Optional Voltages: 480, 120-240 & 240-480/50-60 Hz



Specifications

- 3/8" & 1 1/2" NPT Solenoids
- Rulon Seat Material
- Watts: 12 @ 60Hz
- VA Inrush: 38
- VA Holding: 19
- Maximum working pressure: 300 psi
- Minimum Operating Pressure Differential : 5 psi
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- UL/CUL file number: MP604

• Weights:	Pipe Size	
	3/8, 1/2	1 lb. 8 oz.
	3/4	3 lbs.
	1	4 lbs. 4 oz.
	1-1/4	6 lbs. 2 oz.
	1-1/2	8 lbs. 6 oz.

Ordering Information*

Pipe Size	Orifice Size	M.O.P.D ²	Cv	Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC			Size	Insulation	Enclosure			
Brass General Purpose										
3/8	1/2	250	3.5	180°F	A 12 Watts @ 60 Hz	M Class F Molded	G Junction Box	222CB3/8B1/2B		BUNA-N
1/2	1/2		3.5					222CB1/2B1/2B	039917	
3/4	3/4		7.0					222CB3/4B3/4B	028192	
1	1		13.0					222CB1B1B	039931	
1-1/4	1-1/4		16.0					222CB1-1/4B1-1/4B	039918	
1-1/2	1-1/2		25.0					222CB1-1/2B1-1/2B	038879	
Brass Steam										
1/2	1/2	150	3.5	400°F	A 12 Watts @ 60 Hz	H Class F Molded	G Junction Box	222CB1/2B1/2T	037958	Rulon with Ethylene Propylene Gaskets
3/4	3/4		7.0					222CB3/4B3/4T	039930	
1	1		13.0					222CB1B1T	039834	
1-1/4	1-1/4		16.0					222CB1-1/4B1-1/4T	040532	
1-1/2	1-1/2		25.0					222CB1-1/2B1-1/2T	040582	
Brass Steam										
3/4	3/4	150	7.0	400°F		Same As Above		222CB- 3/4 B-3/4 P	041314	Ethylene Prop.

¹With an ambient temperature of 77°F.

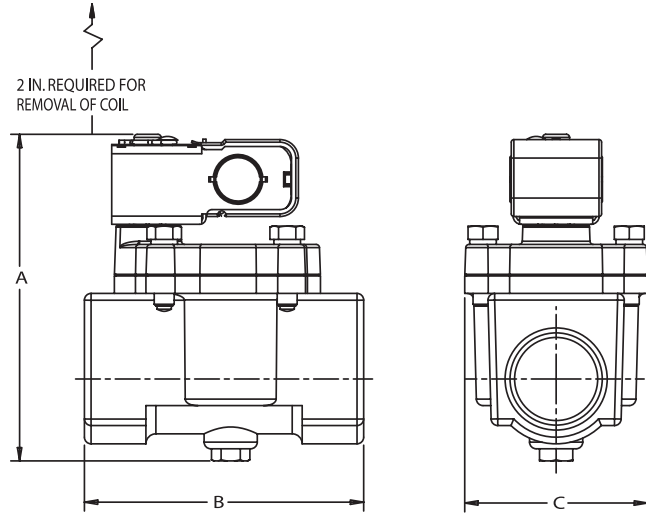
²Maximum Operating Pressure Differential.

*VLC - See coil assemblies for availability.

Standard Product Offering

222CB

222CB Dimensional Data (in)



Orifice Size	A*	B	C
1/2	4.59	2.47	1.63
3/4	4.91	3.25	2.06
1	5.38	4.06	2.63
1 1/4	5.66	4.56	3.00
1 1/2	6.16	5.25	3.44

* Add 0.97 for Manual Override

Valve Options

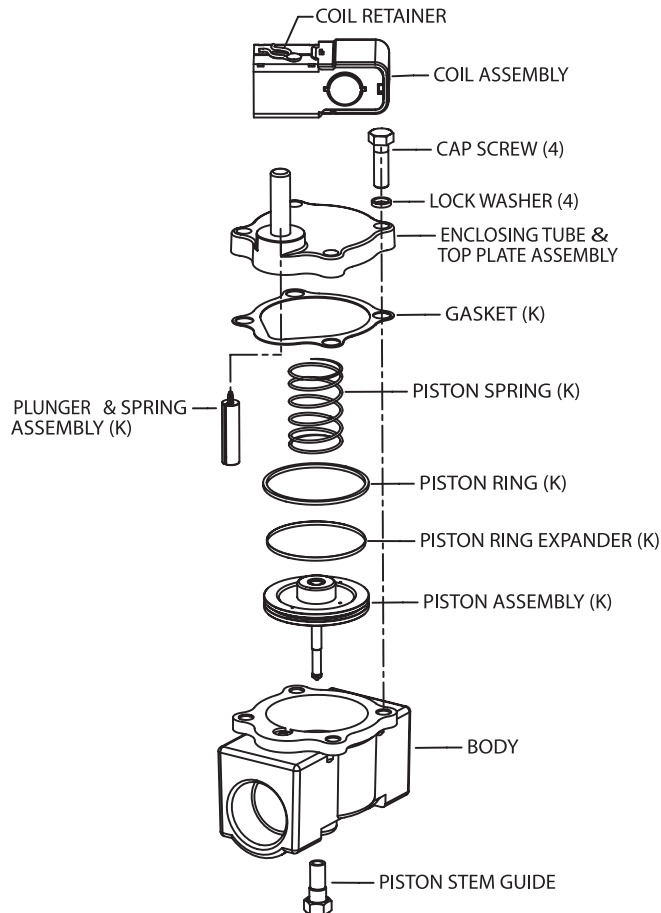
Options	To Order
Manual Override (not for steam) Field Installed	Add suffix "M" to catalog number.

222CB Valve Repair Kits

Seat Material	Orifice Size - NPT									
	3/8 & 1/2	PCN	3/4	PCN	1	PCN	1-1/4	PCN	1-1/2	PCN
Buna-N	K-1116	030765	K-1120	037558	K-1124	028955	K-1128	031349	K-1132	028956
Rulon	K-1118	029235	K-1122	021109	K-1126	034178	K-1130	034047		
Ethylene Propylene			K-1121	040680						

Standard Product Offering

Exploded View



Valve Repair Kit

"K" indicates part is supplied in valve repair kit.

Coil Assembly

See coil assemblies for availability.

314UB

The 314UB is a direct-acting, 3-way universal valve for air and water applications.

Features

- Rugged industrial construction
- Both seat discs are spring loaded
- Superior life with stainless steel enclosing tube

Options

- Brass or stainless steel bodies
- Optional Voltages: 480, 120-240 & 240-480/50-60 Hz

NOTE: 314U valves require an AMGN, EM or ASC-Type coil.

Specifications

- 1/4" NPT Solenoids
- Watts: 12 @ 60Hz
- VA Inrush: 36
- VA Holding: 24
- Maximum working pressure: 500 psi
- Weight: 1 lb.
- Standard Voltages: 24, 120, 208-240/50-60 Hz
- UL/CUL file number: MP604



Ordering Information*

Pipe Size	Orifice Size	M.O.P.D ²			Max. AC Fluid Temp. ¹	Recommended Coils			Description	PCN	Elastomer
		AC	Port 2	Port 3		Size	Insulation	Enclosure			
Brass General Purpose											
1/4	3/64	125	.05	.06	180°F	A 12 Watts @ 60 Hz	M Class F Molded	GN Junction Box	314UB1/4B3/64B3/64B	030722	BUNA-N
	3/32	40	.22	.17		314UB1/4B3/32B3/32B	030719				
Stainless Steel General Purpose											
1/4	3/64	125	.05	.06	180°F	A 12 Watts @ 60 Hz	M Class F Molded	GN Junction Box	314UB1/4S3/64B3/64B	030725	BUNA-N

¹With an ambient temperature of 77°F.

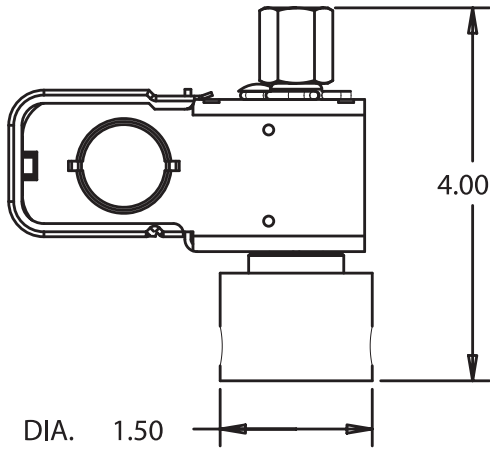
²Maximum Operating Pressure Differential.

*VLC - See coil assemblies for availability.

Standard Product Offering

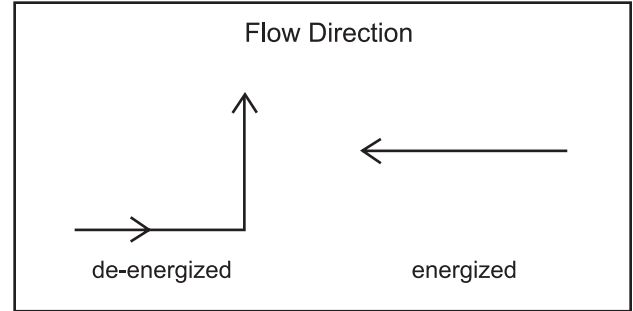
314UB

Dimensional Data (in)

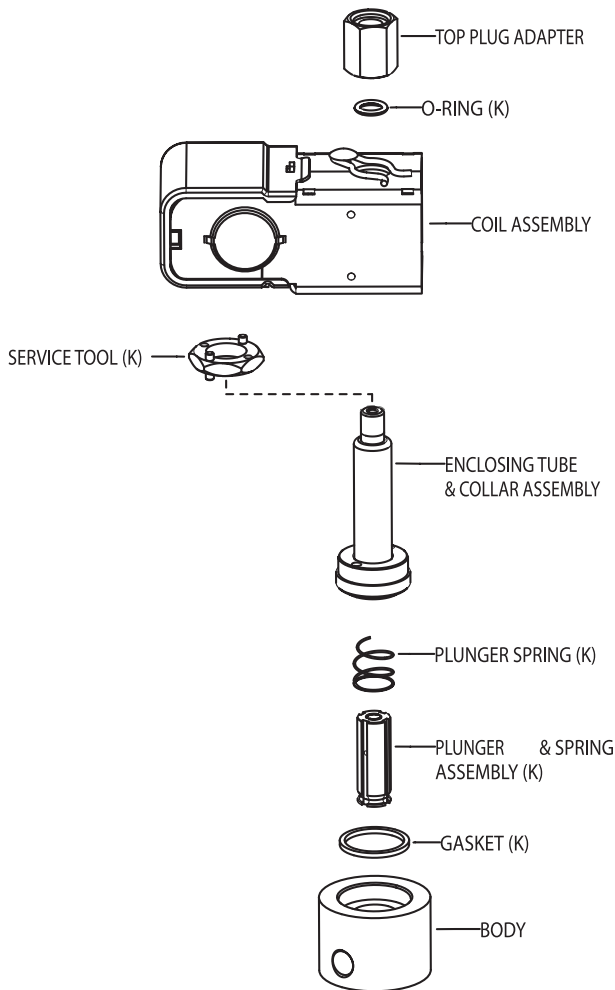


Valve Options

Options	To Order
Silver Shading Band (on stainless steel valves)	Change body material code. Example: Change standard 314UB1/8S to non-standard 314UB1/bT (silver shading band)



Exploded View



Valve Repair Kit

Seat Material	Kit #	PCN
Buna-N	K-1093	037054

Valve Repair Kit

"K" indicates part is supplied in valve repair kit.

Coil Assembly

See coil assemblies for availability.

Old to New Cross Reference

Old Model	Old PCN	New Model	New PCN
121WB5CP02	030038	204CD 1/4B 5/32 B VLC	030735
121WB03P02	040412	204CD 1/4B 3/16 B VLC	030736
121WB04P02	040337	204CD 1/4B 1/4 B VLC	030737
121SB5CP02	040300	204CD 1/4B 5/32 T VLC	030750
201WB04P02	091876	214CB 1/4B 1/4 B VLC	030540
201WB05P02	040758	214CB 3/8B 5/16 B VLC	064854
201WB06P02	065610	214CB 3/8B 3/8 B VLC	030545
231WB08P04	030051	222CB 1/2 B 1/2 B VLC	039917
231WB12P06	039987	222CB 3/4 B 3/4 B VLC	028192
231WB16P08	034211	222CB 1 B 1 B VLC	039931
231WB20P10	040283	222CB 1-1/4 B 1-1/4 B VLC	039918
231WB24P12	040021	222CB 1-1/2 B 1-1/2 B VLC	038879
231SB08P04	034171	222CB 1/2 B 1/2 T VLC	037958
231SB12P06	040069	222CB 3/4 B 3/4 T VLC	039930
231SB16P08	030048	222CB 1 B 1 T VLC	039834
231SB20P10	040365	222CB 1-1/4 B 1-1/4 T VLC	040532
231SB24P12	040366	222CB 1-1/2 B 1-1/2 T VLC	040582
241WA10P03	035073	210CA 3/8 B 5/8 B VLC	030619
241WA10P04	035023	210CA 1/2 B 5/8 B VLC	030620
241WA12P06	035022	210CA 3/4 B 3/4 B VLC	030621
241WA16P08	038857	210CA 1 B 1 B VLC	038629

Standard Product Offering

Thermal
Expansion Valves

TXV Extended
Capacity Tables

EX Valves
and Controls

EX Extended
Capacity Tables

Solenoid Valves
and Coils

Solenoid Capacity
Tables

Industrial Solenoid
Valves

Shut Off
Valves

System
Protectors

System Protectors
Capacity Tables

Oil
Controls

Temperature
Pressure Controls

ACK Check Valves

The ACK check valve is a normally closed magnetic check valve that prevents reverse refrigerant flow in liquid lines and compressor discharge lines.



Features

- Copper Connection Sizes 1/4" through 2-5/8"
- Hermetic Spun Copper Design
- Magnetic Checking Action
- Built-In 30 Mesh Stainless Steel Strainer
- Can Be Installed In Any Position

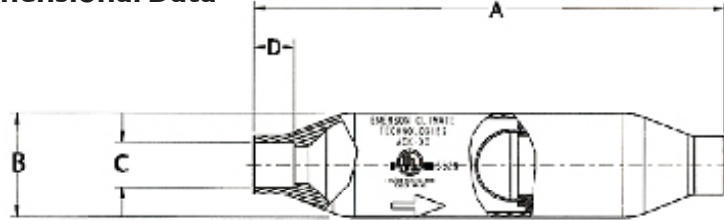
Specifications

- UL/CUL File number: SA 5312

Nomenclature example: ACK-4

ACK	4
Check Valve Series	Copper ODF Connection Size (in 1/16")

Dimensional Data



Ordering Information and Dimensional Data (in)

Cross Reference

PCN	Description	Connection Size	A	B	C	D	Opening Pressure (oz/sq in)	Opening Pressure (psig)	MWP (psig)	A-1 Components	Superior
064985	ACK-4	1/4 ODF	4.00	0.88	0.254 ± 0.002	0.19	1.2	0.08	800	MS-4	900M-4S
064986	ACK-6	3/8 ODF			0.379 ± 0.002	0.4	1.3	0.08		MS-6	900M-6S
094987	ACK-8	1/2 ODF	5.00	1.13	0.504 ± 0.002	0.63	3.5	0.22	680	MS-8	900M-8S
094988	ACK-10	5/8 ODF			0.629 ± 0.002	0.5				MS-10	900M-10S
094989	ACK-12	3/4 ODF	7.00	1.63	0.754 ± 0.002	0.63	3.8	0.24	680	MS-12	900M-12S
094990	ACK-14	7/8 ODF			0.879 ± 0.003	0.63				MS-14	900M-14S
064991	ACK-18	1-1/8 ODF	8.38	2.13	1.130 ± 0.003	0.63	6.8	0.43	680	MS-18	N/A
094992	ACK-22	1-3/8 ODF	9.38	2.63	1.380 ± 0.003	1.04	10.2	0.64	680	MS-22	N/A
094993	ACK-26	1-5/8 ODF	10.50	3.13	1.630 ± 0.003	1.07	11.4	0.71	680	MS-26	N/A
094994	ACK-34	2-1/8 ODF	12.00	3.63	2.130 ± 0.003	1.34	18.1	1.13	680	MS-34	N/A
094995	ACK-42	2-5/8 ODF	13.00	4.13	2.630 ± 0.003	1.50	23.00	1.44	680	MS-42	N/A

Standard Product Offering

Capacities

PCN	Description	Nominal Tons R-22 Discharge 40°F @ 2 psi	Nominal Tons R-22 Suction 40°F @ 1 psi	Nominal Tons R-22 Liquid 40°F @ 1 psi	Nominal Tons R-404A Discharge 40°F @ 2 psi	Nominal Tons R-404A Suction 40°F @ 1 psi	Nominal Tons R-404A Liquid 40°F @ 1 psi	Nominal Tons R-410A Discharge 40°F @ 2 psi	Nominal Tons R-410A Suction 40°F @ 1 psi	Nominal Tons R-410A Liquid 40°F @ 1 psi	Cv
064985	ACK-4	0.66	0.40	2.60	.59	0.34	1.77	0.80	0.48	2.59	0.9
064986	ACK-6	1.34	0.60	3.10	1.20	0.50	2.11	1.63	0.72	3.09	1.0
064987	ACK-8	2.49	1.20	9.40	2.23	1.01	6.39	3.01	1.44	9.37	3.1
064988	ACK-10	2.98	1.40	13	2.67	1.18	8.84	3.61	1.68	12.96	3.6
064989	ACK-12	6.51	3.30	27	5.82	2.77	18.36	7.87	3.96	26.92	8.0
064990	ACK-14	7.5	3.70	29	6.71	3.11	19.72	9.08	4.44	28.91	9.2
064991	ACK-18	11.8	6	51	10.55	5.04	34.68	14.27	7.20	50.85	15.4
064992	ACK-22	19.82	9.50	79	17.73	7.98	53.72	23.98	11.40	78.76	23.8
064993	ACK-26	29.11	17	102	26.04	14.28	69.36	35.21	20.40	101.69	24.2
064994	ACK-34	45.98	30	213	41.13	25.20	144.84	55.62	36.00	212.36	38.7
064995	ACK-42	56.68	50	375	50.70	42.00	255.00	68.56	60.00	373.88	71.7

BV Series Refrigeration Ball Valves

The BVE/BVS series welded refrigeration ball valves isolate suction, discharge, and liquid line pipework during maintenance shutdown periods.

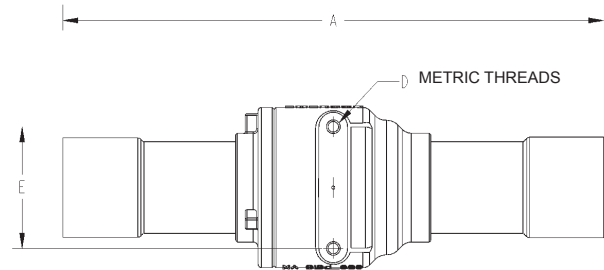
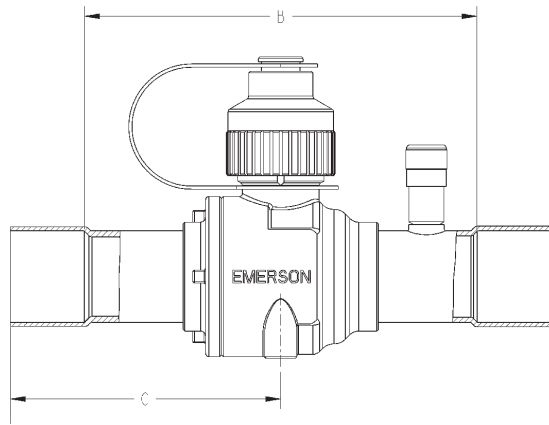
Features

- Forged brass body
- Compact, lightweight, hermetic welded design
- Compatible with HCFC and HFC refrigerants/lubricants including R-410A and CO₂
- Full flow design*
- Bi-directional flow characteristics
- Valve stem cap retained by strap attached to main body
- Integrated access port available on all sizes
- Low operating friction design

Nomenclature example: BVE 1 1/8

BV	E	1/8
Ball Valve	Access Valve E = without S = with	Connection Size (in 1/8")

Dimensional Data



Specifications

- Body: Forged Brass
- Extended tubes: 100% Copper Connections
- Maximum working pressure: 650 psig
- Fluid temperature range: -40°F to 250°F (302°F short term)
- UL/CUL file number: SA 5312

Replacement Parts: Locking Seal Caps

BVE/BVS Valve Size (in.)	PCN	Quantity (per pack)
1/4 - 7/8	806770	10 pcs.
1 1/8 - 1 3/8	806771	10 pcs.
1 5/8 - 2 5/8	806772	10 pcs.

Standard Product Offering

Selection & Ordering Information

Models Without Access Valve		Models With Access Valve		Connection Size (in.)	Dimensions					Port Size	Weight (lbs.)
Model	PCN	Model	PCN		A	B	C	D	E		
BVE 014	806730	BVS 014	806750	1/4 ODF	4.72	4.02	2.36	M3	0.59	Full Port	0.79
BVE 038	806732	BVS 038	806752	3/8 ODF	4.72	4.02	2.36		0.59	Full Port	0.79
BVE 012	806734	BVS 012	806754	1/2 ODF	5.00	4.21	2.50	M4	0.87	Full Port	0.79
BVE 058	806736	BVS 058	806756	5/8 ODF	5.00	3.98	2.50		0.87	Full Port	0.84
BVE 034	806737	BVS 034	806757	3/4 ODF	6.18	4.92	3.09		1.22	Full Port	1.45
BVE 078	806738	BVS 078	806758	7/8 ODF	6.18	4.65	3.09		1.22	Full Port	1.45
BVE 118	806739	BVS 118	806759	1 1/8 ODF	6.65	4.84	3.33	M6	1.50	Full Port	2.29
BVE 138	806741	BVS 138	806761	1 3/8 ODF	9.09	7.17	4.55		1.89	Full Port	3.61
BVE 158	806742	BVS 158	806762	1 5/8 ODF	10.91	8.66	5.45		2.17	Full Port	5.35
BVE 218*	806744	BVS 218	806764	2 1/8 ODF	11.69	8.98	5.85	M6	2.91	2" Port	10.48
BVE 258*	806745	BVS 258*	806765	2 5/8 ODF	11.69	8.74	5.85		2.91	2" Port	12.20
BVE 318*	806746	BVS 318*	806766	1 3/8 ODF	11.69	8.39	5.85		2.91	2" Port	12.60

* 2" port

Standard Product Offering

Quick Select Guide

Hermetic Filter Driers			
Type	Filter Drier	Recommended Use	Function
Liquid	EK	CFC, HCFC, HFC	Premium Universal Replacement
Liquid	ADK	CFC, HCFC, HFC	High Acid and Water Removal
Liquid	BOK-HH	CFC, HCFC, HFC	Burnout Cleanup with Charcoal
Liquid	BFK	CFC, HCFC, HFC	Bi-Flow Heat Pump
Suction	SFD	CFC, HCFC, HFC	Suction Line Filter Drier
Suction	CSFD	CFC, HCFC, HFC	Compact Suction Line Filter Drier
Suction	ASD	CFC, HCFC, HFC	Premium Suction Line Filter Drier
Suction	ASK-HH	CFC, HCFC, HFC	Burnout Cleanup with Charcoal
Suction	ASF	CFC, HCFC, HFC	Filter Only
Take-Apart Filter Driers			
Type	Filter Drier	Liquid	Suction
Take-Apart	STAS	X	X
Take-Apart	ADKS	X	X
Take-Apart	BTAS		X
Replaceable Cores/Filters for Take- Apart Shells			
Type	Core/Filter	Recommended use	Function
Core	UK-48/100	CFC, HCFC, HFC	Premium Universal Replacement
Core	D-42/48	CFC, HCFC	High Acid Removal
Core	H-42/48/100	CFC, HCFC	High Acid and Water Removal
Core	W-42/48/100HH	CFC, HCFC, HFC	Burnout Cleanup with Charcoal
Filter	F-48/100	CFC, HCFC, HFC	Filter Only
Core	RH-48	Reclaim Use Only	High Acid and Water Removal
Core	RW-48	Reclaim Use Only	Burnout Cleanup

Recommended System Tonnage

Take-Apart Liquid Line Filter Driers in Tons *

Description	Refrigeration, Low Temp. & Commercial Installations			Air Conditioning	
	R-12/R-134a /R-450A/R-513A	R-22 /R-448A/R-449A	R-404A/R-502/R-507A	Field Replacement & Field Installations R-12/R-134a	R-22/R-407C/R-410A ⁺
STAS 485T	8	10	8	8	10
STAS 487T	10	13	10	10	12 1/2
STAS 489T	10	15	10	10	15
STAS 4811T	13	20	13	13	20
STAS 967T	20	25	15	20	25
STAS 969T	25	30	20	25	30
STAS 9611T	30	35	25	30	35
STAS 9613T	35	40	30	35	40
STAS-9625S-V	40	45	35	40	45
STAS 1449T	30	40	30	30	40
STAS 14411T	40	50	35	40	50
STAS 14413T	45	55	40	45	55
STAS 14417T	60	50	45	50	60
STAS 19211T	50	70	45	50	70
STAS 19213T	60	80	55	60	80
STAS 19217T	65	85	60	65	85
ADKS 30013T	50	65	45	50	65
ADKS 30017T	60	80	50	60	80
ADKS 40017T	65	85	55	65	85
ADKS 40021T	75	100	65	75	100

* For kW, multiply tons by 3.5
 + Consult product catalog pages for R-410A suitability.

Recommended System Tonnage

Hermetic Liquid Line Filter Driers (EK, ADK, BFK, BOK)

(Recommended Capacities at 2 psi drop (See catalog page showing ARI data for capacity at 1 psi drop.)

Description	Refrigeration Low Temp. & Commercial Installations			Air Conditioning Field Replacement & Field Installations		
	R-12/R-134a /R-450A/R-513A	R-22 /R-448A/R-449A	R-404A/R-502/R-507	R-12/R-134a	R-22/R-407C/R-410A	
032	1/2	1/2	1/2	1	1-1/2	
032S						
033						
033S						
052	3/4	3/4				
052S						
053	1-1/2	2	1-1/2	3	4	
053S						
082	1	1	3/4	1-1/2	2	
082S		2	2	1	3	4
0825S			3	2	4	5
083	2	3	2	4	5	
083S		4		4	5	7-1/2
084			4	5	7-1/2	
084S						
162	1-1/2	2	1	1-1/2	2	
162S						
1625S	2	3	2	3	4	
163	3	5	3	4	5	
163S				7-1/2	5	10
164					7-1/2	12
164S		5		7-1/2	10	
165				5	6	
165S	4	7-1/2	4	7-1/2	10	
303		10	4	10	15	
303S			5	18	24	
304				20	26	
304S	7-1/2	15	5	5		
305		5	7-1/2	7-1/2	12	
305S			5	12	18	
307S	10	10	18	25		
309S		12	20	27		
413	7-1/2	25	15	22	30	
414		30	10	20	27	
414S			12	20	27	
415	10	25	15	22	30	
415S		30	20	25	34	
417S						
419S						
757S						
759S						

Thermal
Expansion Valves

TXV Extended
Capacity Tables

EX Valves
and Controls

EX Extended
Capacity Tables

Solenoid Valves
and Coils

Solenoid Capacity
Tables

Industrial Solenoid
Valves

Shut-Off
Valves

System
Protectors

System Protectors
Capacity Tables

Oil
Controls

Temperature
Pressure Controls

EK Liquid Line Filter Drier

The EK Liquid Line filter drier is a premium compacted bead filter drier with a 20 micron outlet pad for maximum filtration. The EK is a premium universal replacement liquid line filter drier for CFC, HCFC and HFC refrigerants including R-12, R-134a, R-22, R-404A, R-407C, R-410A, R-500, R-502, and R-507.



Features

- Filtration first for more effective use of surface area of desiccant
- High moisture and acid removal capacity
- Solid copper connections
- Corrosion resistant epoxy powder paint finish
- Copeland® brand products approved for POE Oils
- Shock resistant steel shell construction

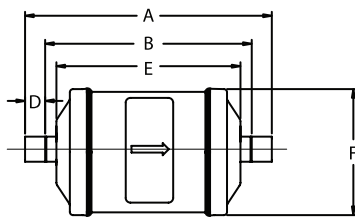
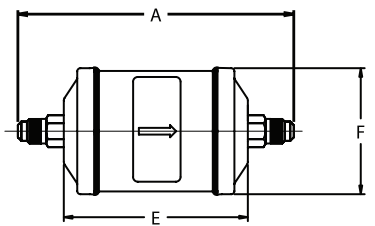
Specifications

- Desiccant blend - optimized for high water capacity and acid capacity
- Filtration: 20 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124

Nomenclature example: EK-083S

EK	08	3	S
Drier Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF connections (omit for SAE)

Dimensional Data



Ordering Information

PCN	Description	Dimensions (in)					Weight (lbs)
		A	B	D	E	F	
060009	EK 032	4.38					0.48
060012	EK 032S	3.83	2.71	0.56			
060011	EK 032FM	3.92			2.57	1.75	
060010	EK 032MF	3.92					
060013	EK 033	4.69					
060014	EK 033S	4.03	2.79	0.62			1.04
047601	EK 052	4.83			3.02		
057013	EK 052MF	4.37					
047602	EK 052S	4.15	3.46	0.35			
047603	EK 053	5.14					
047604	EK 053S	4.48	3.24	0.62			1.23
047605	EK 082	5.64			3.83		
047606	EK 082S	4.96	4.27	0.35			
049551	EK 0825S	5.01	4.37	0.32			
056906	EK 083MF	5.70					
047607	EK 083	5.95			2.64		
047608	EK 083S	5.29	4.05	0.62			
047609	EK 084	6.17					
047610	EK 084S	5.33	4.07	0.63			1.49
047611	EK162	6.58			4.77		
047612	EK 162S	5.90	5.21	0.35			
056045	EK 1625S	5.95	5.31	0.32			
047613	EK 163	6.89					
047614	EK 163S	6.24	5.43	0.40			
047615	EK 164	7.11			7.54	3.14	
047616	EK 164S	6.33	5.33	0.50			
047617	EK 165	7.57					
047618	EK 165S	6.55	5.30	0.63			
047619	EK 167S	7.13	5.63	0.75			
048210	EK 303	9.66			7.67	3.64	
048211	EK 303S	9.01	8.21	0.40			
048212	EK 304	9.88					
048213	EK 304S	9.10	8.10	0.50			
048214	EK 305	10.34					
048215	EK 305S	9.32	8.07	0.63			
048216	EK 306S	9.73	8.48	0.63			
048217	EK 307S	9.90	8.40	0.75			
048218	EK 309S	10.26	8.45	0.90			
048219	EK 413	9.79			13.16		
048220	EK 414	10.01					
048221	EK 414S	9.23	8.23	0.50			
048222	EK 415	10.47		-			
048223	EK 415S	9.45	8.20	0.63			
048224	EK 417S	10.03	8.53	0.75			
048225	EK 419S	10.39	8.58	0.91			
048228	EK 757S	15.25	14.02	0.61			
048229	EK 759S	15.88	14.07	0.91			

EK Contractor's Choice Filter Drier

The EK Contractor's Choice filter drier is designed for foodservice and residential air conditioning applications.

Features

- Extended solid copper connections
- Dual access valves for faster and easier system diagnosis
- Incorporates all the internal features of the premium EK

Specifications

- Desiccant blend - optimized for high water capacity and acid capacity
- Filtration: 20 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124



Ordering Information

PCN	Description
063908	EK 032S VV
065966	EK 052S VV
065963	EK 053S VV
065964	EK 083S VV
065965	EK 163S VV

Standard Product Offering

EK Cap Tube Filter Drier

The EK Cap Tube filter drier is designed for foodservice refrigeration systems.

Features

- Schrader valve on the inlet side acts as a maintenance and charging port
- Outlet is designed to accept capillary tubing without the need for crimping
- Extended solid copper 1/4 ODF connection inlet by cap tube
- Incorporates all the internal features of the premium EK

Specifications

- Desiccant blend - optimized for high water capacity and acid capacity
- Filtration: 20 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124



Ordering Information

PCN	Description
063208	EK 032 SV CAP (3 cubic inch)
065846	EK 052 SV CAP (5 cubic inch)

Standard Product Offering

EK Filter Driers

Capacity Tables

Description	Connections Inlet/Outlet	Flow Capacity Tons @ 1 psi ΔP ^{1,4} (For kW, multiply tons by 3.5)						Water Capacity ² Drops of Water ³																															
		R-12	R-134a R-450A R-513A	R-22 R-410A R-448A R-449A	R-407C	R-404A/ R-507	R-744	R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502		R-744																	
								75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	-10°F	25°F																
EK 03 2 FM	1/4 Fem/1/4 Male SAE	1.6	2.0	2.2	2.1	1.4	2.8	47	41	40	37	40	33	33	25	21	19	38	37	42	37	30	34																
EK 03 2 MF	1/4 Male/1/4 Fem SAE	1.6	2.0	2.2	2.1	1.4	2.8																																
EK 03 2	1/4 SAE	1.6	2.0	2.2	2.1	1.4	2.8																																
EK 03 2 S	1/4 ODF	2.2	2.7	2.9	2.9	2.0	3.7																																
EK 03 2 SV	1/4 ODF	2.2	2.7	2.9	2.9	2.0	3.7																																
EK 03 3	3/8 SAE	2.5	3.0	3.3	3.2	2.2	4.3																																
EK 03 3 S	3/8 ODF	2.5	3.0	3.3	3.2	2.2	4.3																																
EK 05 2 FM	1/4 Fem/1/4 Male SAE	1.7	2.1	2.3	2.2	1.5	3.0																	133	119	116	106	114	97	95	75	64	58	109	106	120	107	81	89
EK 05 2 MF	1/4 Male/1/4 Fem SAE	1.7	2.1	2.3	2.2	1.5	3.0																																
EK 05 2	1/4 SAE	1.7	2.1	2.3	2.2	1.5	3.0																																
EK 05 2 S	1/4 ODF	2.5	3.1	3.4	3.3	2.2	4.6																																
EK 05 3 MF	3/8 Male/3/8 Fem SAE	2.9	3.5	3.8	3.7	2.5	4.9																																
EK 05 3	3/8 SAE	2.9	3.5	3.8	3.7	2.5	4.9																																
EK 05 3 S	3/8 ODF	3.6	4.4	4.8	4.7	3.2	6.2																																
EK 08 2 FM	1/4 Fem/1/4 Male SAE	1.9	2.3	2.5	2.4	1.7	3.2	274	240	237	218	235	200	195	155	159	118	224	217	245	217	163	180																
EK 08 2 MF	1/4 Male/1/4 Fem SAE	1.9	2.3	2.5	2.4	1.7	3.2																																
EK 08 2	1/4 SAE	1.9	2.3	2.5	2.4	1.7	3.2																																
EK 08 2 S	1/4 ODF	2.7	3.3	3.6	3.5	2.4	4.4																																
EK 08 25 S	5/16 ODF	2.9	3.5	3.8	3.7	2.5	4.9																																
EK 08 3 MF	3/8 Male/3/8 Fem SAE	3.3	4.0	4.3	4.3	2.9	5.5																																
EK 08 3	3/8 SAE	3.3	4.0	4.3	4.3	2.9	5.5																																
EK 08 3 S	3/8 ODF	3.7	4.5	4.9	4.8	3.3	6.3																																
EK 08 4	1/2 SAE	5.5	6.7	7.3	7.1	4.9	9.4																																
EK 08 4 S	1/2 ODF	5.8	7.1	7.7	7.5	5.1	9.9																																
EK 16 2 MF	1/4 Male/1/4 Fem SAE	1.9	2.3	2.5	2.4	1.7	3.2	347	301	371	341	368	313	305	240	206	186	350	340	306	272	260	286																
EK 16 2	1/4 SAE	1.9	2.3	2.5	2.4	1.7	3.2																																
EK 16 2 S	1/4 ODF	2.5	3.1	3.4	3.3	2.2	4.4																																
EK 16 25 S	5/16 ODF	2.5	3.1	3.4	3.3	2.2	4.4																																
EK 16 3	3/8 SAE	3.2	3.9	4.2	4.1	2.8	5.4																																
EK 16 3 S	3/8 ODF	3.6	4.4	4.8	4.7	3.2	6.2																																
EK 16 4	1/2 SAE	5	6.1	7.3	6.5	6.6	10.1																																
EK 16 4 S	1/2 ODF	7.0	8.5	9.0	9.0	6.2	11.9																																
EK 16 5	5/8 SAE	8.0	9.7	10.5	10.3	7.0	13.5																																
EK 16 5 S	5/8 ODF	8.3	10.1	10.9	10.7	7.3	14.1																																
EK 16 7 S	7/8 ODF	12.7	15.5	16.8	16.5	11.2	21.7																																
EK 30 3	3/8 SAE	3.5	4.3	4.7	4.6	3.1	6.1	601	526	664	611	657	561	548	434	515	355	627	608	536	477	458	504																
EK 30 3 S	3/8 ODF	5.2	6.3	6.8	6.7	4.6	8.8																																
EK 30 4	1/2 SAE	6.6	8.1	8.8	8.6	5.9	11.4																																
EK 30 4 S	1/2 ODF	8.2	10.0	10.8	10.6	7.2	13.9																																
EK 30 5	5/8 SAE	8.7	10.6	11.5	11.3	7.7	14.8																																
EK 30 6 S	3/4 ODF	12.1	14.8	16.0	15.7	10.7	20.6																																
EK 30 7 S	7/8 ODF	13.8	16.8	18.2	17.9	12.2	23.5																																
EK 30 9 S	1 1/8 ODF	16.1	19.6	21.2	20.8	14.2	27.3																																
EK 41 3	3/8 SAE	3.5	4.3	4.7	4.6	3.1	6.1																																
EK 41 4	1/2 SAE	8.5	10.4	11.3	11.1	7.5	14.6																																
EK 41 4 S	1/2 ODF	8.9	10.8	11.7	11.5	7.8	15.1																																
EK 41 5	5/8 SAE	9.8	12.0	13.0	12.8	8.7	16.8																																
EK 41 7 S	7/8 ODF	16.6	20.3	22.0	21.6	14.7	28.4																																
EK 41 9 S	1 1/8 ODF	22.7	27.7	30.0	29.4	20.1	38.7																																
EK 75 7 S	7/8 ODF	18.2	22.2	24.1	23.6	16.1	31.1	2368	2159	2159	2019	2159	1880	1810	1460	1460	1111	2019	2019	2229	2019	1578	1737																
EK 75 9 S	1 1/8 ODF	26.8	32.7	35.4	34.8	23.7	45.7																																

¹ All ratings in accordance with ARI Standard 710-04, 86°F liquid refrigerant temperature
5°F saturated vapor temperature
3.1 lbs./min./ton for R-134a
2.9 lbs./min./ton for R-22 and R-407C
4.0 lbs./min./ton for R-404A/507 and R-12
2.7 lbs./min./ton for R-410A

² Water Capacities are based on:
Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/507,
R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12

³ 20 drops of water = 1 gram = 1 cc

⁴ For 2 PSI ΔP , Multiply values by 1.4

⁵ Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

Liquid Refrigerant Holding Capacity-Ounces

Unit Size	R-12		R-134a/R-450A/R-513A		R-22/R-448A/R-449A		R-407C		R-410A		R-404A/R-507		R-502		R-744	
	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	20°F	-20°F
03	2.9	2.6	2.6	2.3	2.6	2.3	2.5	2.1	2.3	1.9	2.3	1.9	2.7	2.3	2.1	2.3
05	6.5	5.9	6.0	5.4	5.9	5.3	5.6	4.9	5.3	4.4	5.2	4.4	6.0	5.3	4.8	5.3
08	8.3	7.6	7.6	6.9	7.5	6.8	7.2	6.3	6.7	5.7	6.6	5.6	7.7	6.8	6.1	6.7
16	10.2	9.4	9.4	8.6	9.3	8.4	8.9	7.8	8.3	7.0	8.2	6.9	9.5	8.4	7.5	8.3
30	28.7	26.3	26.4	23.9	26.1	23.5	24.9	21.9	23.3	19.6	22.9	19.4	26.7	23.4	21.1	23.4
41	40.0	36.4	36.9	33.1	36.4	32.5	34.7	30.3	32.5	27.2	31.9	26.8	37.2	32.4	29.2	32.4
75	72.4	66.3	66.7	60.3	65.8	59.2	62.8	55.2	58.7	49.5	57.7	48.9	67.2	59.0	53.1	58.9

ADK Core Style Liquid Line Filter Drier

The ADK is a solid core liquid line filter drier good for use with CFC, HCFC, and HFC refrigerants.

Features

- Solid copper connections
- High moisture and acid removal capacity
- Corrosion resistant epoxy powder paint finish
- Copeland® products approved for POE oils



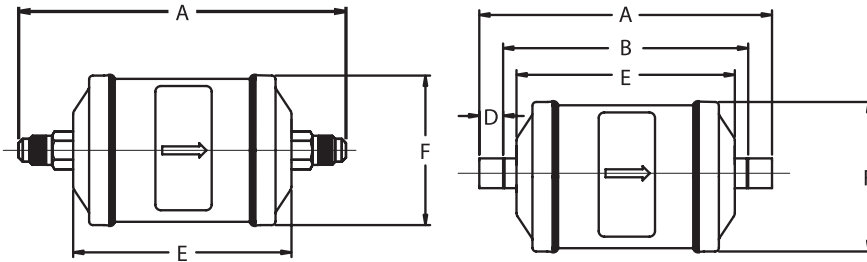
Specifications

- Desiccant Blend: optimized for high water capacity and acid capacity
- Filtration: 40 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124

Nomenclature example: ADK 083S

ADK	08	3	S
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF connections (omit for SAE)

Dimensional Data



Ordering Information

PCN	Description	Connection Size	Dimensions (in)					Average Weight (lbs)
			A	B	D	E	F	
059874	ADK-032	1/4 SAE	4.38					
052451	ADK-032S	1/4 ODF	3.83	2.71	0.56			
023157	ADK-033	3/8 SAE	4.69			2.57	1.75	0.51
053172	ADK-033S	3/8 ODF	4.03	2.79	0.62			
060125	ADK-052	1/4 SAE	4.84					
060126	ADK-052S	1/4 ODF	4.17	3.48	0.35			
060127	ADK-053	3/8 SAE	5.15			3.03	2.64	1.05
060128	ADK-053S	3/8 ODF	4.49	3.25	0.62			
060129	ADK-082	1/4 SAE	5.66					
060130	ADK-082S	1/4 ODF	4.99	4.29	0.35			
060131	ADK-083	3/8 SAE	5.97			3.85	2.64	1.25
060132	ADK-083S	3/8 ODF	5.30	4.07	0.62			
060133	ADK-084	1/2 SAE	6.19					
060134	ADK-084S	1/2 ODF	5.35	4.09	0.63			
059838	ADK-162S	1/4 ODF	5.35	4.66	0.35			
059820	ADK-162	1/4 SAE	6.59					
059839	ADK-163	3/8 SAE	6.90					
060795	ADK-163S	3/8 ODF	6.23	5	0.62			
059840	ADK-164	1/2 SAE	7.12			4.78	2.64	1.53
059841	ADK-164S	1/2 ODF	6.28	5.07	0.60			
059842	ADK-165	5/8 SAE	7.58					
059843	ADK-165S	5/8 ODF	6.55	5.09	0.73			
060172	ADK-303	3/8 SAE	9.66					
058507	ADK-303S	5/8 ODF	9.01	8.2	0.40			
060173	ADK-304	1/2 SAE	9.88					
060176	ADK-304S	1/2 ODF	9.10	8.1	0.50			
060174	ADK-305	5/8 SAE	10.34			7.54	3.14	3.11
060177	ADK-305S	5/8 ODF	9.32	8.07	0.63			
060178	ADK-307S	7/8 ODF	9.90	8.4	0.75			
060179	ADK-309S	1-1/8 ODF	10.26	8.448	0.90			
060182	ADK-413	3/8 SAE	9.82					
060183	ADK-414	1/2 SAE	10.04					
060185	ADK-414S	1/2 ODF	9.26	8.26	0.50			
060184	ADK-415	5/8 SAE	10.50			7.70	3.64	3.78
060186	ADK-415S	5/8 ODF	9.48	8.23	0.63			
060187	ADK-417S	7/8 ODF	10.06	8.56	0.75			
060188	ADK-419S	1-1/8 ODF	10.42	8.60	0.91			
060190	ADK-757S	7/8 ODF	15.55	14.05	0.75	13.19	3.64	6.53
060191	ADK-759S	1-1/8 ODF	15.91	14.10	0.90			

ADK Filter Driers

Capacity Tables

Description	Connection	Flow Capacity Tons @ 1 psi ΔP ^{1, 4} (For kW, multiply tons by 3.5)							Water Capacity ² Drops of Water ³															
		R-12	R-134a R-450A R-513A	R-22 R-448A R-449A	R-410A	R-407C	R-404A R-507	R-744	R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502		R-744	
		125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	-10°F	25°F		
ADK 032	1/4 SAE	1.6	1.9	2.1	2.1	2.0	1.4	2.7	70	74	68	69	63	57	46	47	36	76	72	71	63	58	64	
ADK 032S	1/4 ODF	1.9	2.3	2.5	2.5	2.4	1.7	3.2																
ADK 033	3/8 SAE	2.2	2.7	2.9	2.9	2.9	2.0	3.7																
ADK 033S	3/8 ODF	2.5	3.0	3.3	3.3	3.2	2.2	4.3																
ADK 052	1/4 SAE	1.6	2.0	2.2	2.2	2.1	1.4	2.8	185	195	180	180	130	150	120	125	95	200	190	185	165	144	169	
ADK 052S	1/4 ODF	2.4	2.9	3.1	3.1	3.1	2.1	4.0																
ADK 053	3/8 SAE	3.0	3.7	4.0	4.0	3.9	2.7	5.2																
ADK 53S	3/8 ODF	3.7	4.5	4.9	4.9	4.8	3.3	6.3																
ADK 082	1/4 SAE	1.6	2.0	2.2	2.2	2.1	1.4	2.8	250	265	245	250	225	205	165	170	130	275	260	255	230	198	233	
ADK 082S	1/4 ODF	2.5	3.1	3.4	3.4	3.3	2.2	4.4																
ADK 083	3/8 SAE	3.5	4.3	4.7	4.7	4.6	3.1	6.1																
ADK 083S	3/8 ODF	3.4	4.2	4.6	4.6	4.5	3.0	5.9																
ADK 084	1/2 SAE	5.5	6.7	7.3	7.3	7.1	4.9	9.4																
ADK 084S	1/2 ODF	5.7	7.0	7.6	7.6	7.4	5.1	9.8																
ADK 162	1/4 SAE	1.6	2.0	2.2	2.2	2.1	1.4	2.8	365	390	360	265	330	300	240	250	190	400	380	375	335	328	386	
ADK 163	1/4 SAE	3.6	4.4	4.8	4.8	4.7	3.2	6.2																
ADK 163S	3/8 ODF	4.0	4.9	5.3	5.3	5.2	3.6	6.8																
ADK 164	1/2 SAE	6.8	8.3	9.0	9.0	8.8	6.0	11.6																
ADK 164S	1/2 ODF	7.1	8.6	9.3	9.3	9.1	6.2	12.0																
ADK 165	5/8 SAE	9.7	11.8	12.8	12.8	12.5	8.6	16.5																
ADK 165S	5/8 ODF	10.7	13.1	14.2	14.2	13.9	9.5	18.3																
ADK 167S	7/8 ODF	13.1	16.0	17.3	17.3	17.0	11.8	22.3																
ADK 303	3/8 SAE	3.9	4.7	5.1	5.1	5.0	3.4	6.6																
ADK 304	1/2 SAE	7.1	8.6	9.3	9.3	9.1	6.2	12.0																
ADK 304S	1/2 ODF	7.2	8.8	9.5	9.5	9.4	6.4	12.3																
ADK 305	5/8 SAE	11.3	13.8	15.0	15.0	14.7	10.0	19.4																
ADK 305S	4/8 ODF	11.9	14.5	15.7	15.7	15.4	10.5	20.3																
ADK 306S	3/4 ODF	13.0	15.8	17.1	17.1	16.8	11.5	22.1																
ADK 307S	7/8 ODF	14.3	17.4	18.9	18.9	18.5	12.6	24.4																
ADK 309S	1 1/8 ODF	20.4	24.9	27.0	27.0	26.5	18.0	34.8																
ADK 413	3/8 SAE	3.9	4.7	5.1	5.1	5.0	3.4	6.6																
ADK 414	1/2 SAE	8.0	9.8	10.6	10.6	10.4	7.1	13.7																
ADK 414S	1/2 ODF	8.8	10.7	11.6	11.6	11.4	7.8	15.0																
ADK 415	5/8 SAE	12.8	15.6	16.9	16.9	16.6	11.3	21.8																
ADK 415S	5/8 ODF	13.5	16.5	17.9	17.9	17.5	12.0	23.1																
ADK 417S	7/8 ODF	16.6	20.3	22.0	22.0	21.7	14.7	28.4																
ADK 419S	1 1/8 ODF	20.7	25.2	27.3	27.3	26.8	18.3	35.2																
ADK 757S	7/8 ODF	28.0	34.2	37.1	37.1	36.3	24.8	47.9																
ADK 759S	1 1/8 ODF	30.6	37.3	40.4	40.4	39.6	27.0	52.1																

¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature
 5°F saturated vapor temperature
 3.1 lbs./min./ton for R-134a
 2.9 lbs./min./ton for R-22 and R-407C
 4.0 lbs./min./ton for R-404A/507 and R-12
 2.7 lbs./min./ton for R-410A

² Water Capacities are based on:
 Equilibrium Point Dryness (EPD) of:
 50 parts per million for R-134a, R404-A/507,
 R-410A and R-407C
 60 parts per million for R-22
 15 parts per million for R-12

³ 20 drops of water = 1 gram = 1 cc

⁴ For 2 PSI ΔP, Multiply values by 1.4

⁵ Since there is currently no ARI standard for R-744,
 values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

Liquid Refrigerant Holding Capacity-Ounces

Unit Size	R-12		R-134a/R-450A/R-513A		R-22/R-448A/R-449A		R-407C		R-410A		R-404A/507		R-502		R-744	
	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	20°F	-20°F
03	2.4	2.2	2.2	2.0	2.2	2.0	2.1	1.9	2.0	1.7	1.9	1.7	2.7	2.3	1.8	2.0
05	5.9	6.0	5.5	5.5	5.4	5.4	5.2	5.0	4.8	4.5	4.7	4.5	6.0	5.3	4.9	5.4
08	8.0	7.4	7.4	6.7	7.3	6.6	7.0	6.2	6.5	5.5	6.4	5.5	7.7	6.8	5.9	6.5
16	14.5	12.5	13.4	11.4	13.2	11.2	12.6	10.4	11.7	9.4	11.6	9.3	9.5	8.4	10.1	11.2
30	21.8	19.9	20.1	18.1	19.8	17.8	18.9	16.6	17.4	14.9	17.4	14.7	26.7	23.4	16.0	17.7
41	29.3	26.8	26.9	24.4	26.6	23.9	25.4	22.3	23.7	20.0	23.3	19.7	37.2	32.4	21.4	23.8
75	52.8	48.3	48.6	43.9	48.0	43.1	45.8	40.2	42.8	36.0	42.1	35.6	67.2	59.0	38.7	42.9

BFK Liquid Line Bi-Directional Filter Drier

The BFK is a solid core, bi-directional, liquid line filter drier for heat pump applications for use with CFC, HCFC, and HFC refrigerants.

Features

- Available 5 to 30 cu. in. size
- Internal check valves allow flow and filtration in either direction, eliminates need for external check valves
- High moisture and acid removal capacity
- Corrosion resistant epoxy powder paint finish
- Copeland™ brand products approved for POE oils



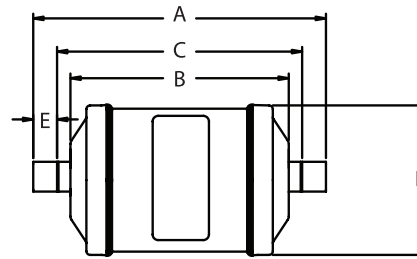
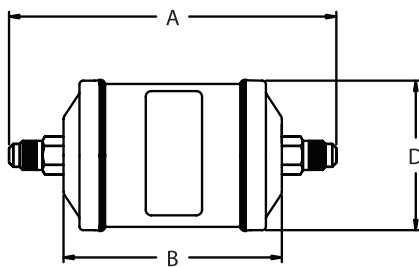
Specifications

- Desiccant Blend: optimized for high water capacity and acid capacity
- Filtration: 40 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124

Nomenclature example: BFK 165S

BFK	16	5	S
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF connections (omit for SAE)

Dimensional Data



Ordering Information

PCN	Description	Connection	Dimension (in)					Average Weight (lbs)
			A	B	C	D	E	
062300	BFK-052	1/4 SAE	4.84	3.03	3.47	2.64	0.99	
062425	BFK-052S	1/4 ODF	4.16					
062254	BFK-053	3/8 SAE	5.15					
062255	BFK-053S	3/8 ODF	4.49	3.84	4.38			
058597	BFK-0825S	5/16 ODF	5.02					
043321	BFK-083	3/8 SAE	5.96					
043323	BFK-083S	3/8 ODF	5.31	4.70	4.50			
043325	BFK-084	1/2 SAE	6.184					
043327	BFK-084S	1/2 ODF	5.40					
043728	BFK085	5/8 SAE	6.64	7.55	4.40	3.14	2.08	
043730	BFK-085S	5/8 ODF	5.62					
043330	BFK-163	3/8 SAE	6.824					
043333	BFK-163S	3/8 ODF	6.17	7.77	5.37			0.35
043335	BFK-164	1/2 SAE	7.04					
043337	BFK-164S	1/2 ODF	6.26					
043732	BFK-165	5/8 SAE	7.50	7.79	5.26			
043734	BFK-165S	5/8 ODF	6.48					
058589	BFK-167S	7/8 ODF	7.06					
063076	BFK303	3/8 SAE	9.674	7.81	5.23	0.35		
063077	BFK-303S	3/8 ODF	9.01					
063078	BFK-304	1/2 SAE	9.89					
063079	BFK-304S	1/2 ODF	9.05	7.83	5.56			
063080	BFK-305	5/8 SAE	10.35					
063081	BFK-305S	5/8 ODF	9.32					
063082	BFK-306	3/4 SAE	10.67	7.79	7.81			
063083	BFK-306S	3/4 ODF	9.74					
063084	BFK-307S	7/8 ODF	9.91					
063451	BFK-309S	1 1/8 ODF	10.27	7.98	1.14			

BFK Liquid Line Bi-Directional Filter Drier

Description	Connection	Flow Capacity Tons @ 1 psi ΔP ^{1,4} (For kW, multiply tons by 3.5)				Water Capacity ² Drops Of Water ³							
		R-22	R-410A	R-407C	R-744	R-22		R-407C		R-410A		R-744	
						75°F	125°F	75°F	125°F	75°F	125°F	-10°F	25°F
BFK-05 2	1/4 SAE	1.6	1.6	1.6	2.1	73	66	58	42	39	35	81	89
BFK-05 2S	1/4 ODF	2.2	2.2	2.2	2.8								
BFK-05 3	3/8 SAE	3.5	3.5	3.4	4.5								
BFK-05 3S	3/8 ODF	4.0	4.0	3.9	5.2								
BFK-08 3	3/8 SAE	4.5	4.5	4.4	5.8	159	144	106	79	85	75	136	150
BFK-08 3S	3/8 ODF	5.1	5.1	5.0	6.6								
BFK-08 4	1/2 SAE	6.4	6.4	6.3	8.3								
BFK-08 4S	1/2 ODF	6.7	6.7	6.6	8.6								
BFK-08 5	5/8 SAE	7.2	7.2	7.0	9.3								
BFK-08 5S	5/8 ODF	8.1	8.1	7.9	10.4								
BFK-16 3	3/8 SAE	4.6	4.6	4.5	5.9	323	294	237	179	178	160	221	260
BFK-16 3S	3/8 ODF	5.2	5.2	5.1	6.7								
BFK-16 4	1/2 SAE	7.7	7.7	7.6	9.9								
BFK-16 4S	1/2 ODF	8.1	8.1	7.9	10.4								
BFK-16 5	5/8 SAE	8.3	8.3	8.1	10.7								
BFK-16 5S	5/8 ODF	8.7	8.7	8.5	11.2								
BFK-30 3S	3/8 ODF	5.8	5.8	5.7	7.5	585	532	452	345	415	293	453	533
BFK-30 4	1/2 SAE	7.6	7.6	7.5	9.8								
BFK-30 4S	1/2 ODF	9.7	9.7	9.5	12.5								
BFK-30 5	5/8 SAE	10.3	10.3	10.1	13.3								
BFK-30 5S	5/8 ODF	14.2	14.2	13.9	18.3								
BFK-30 6S	3/4 ODF	16.0	16.0	15.7	20.6								
BFK-30 7S	7/8 ODF	16.7	16.7	16.4	21.5								
BFK-30 9S	1 1/8 ODF	18.0	18.0	17.5	23.2								

¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature
5°F saturated vapor temperature
3.1 lbs./min./ton for R-134a
2.9 lbs./min./ton for R-22 and R-407C
4.0 lbs./min./ton for R-404A/507 and R-12
2.7 lbs./min./ton for R-410A

² Water Capacities are based on:
Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/507,
R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12

³ 20 drops of water = 1 gram = 1 cc

⁴ For 2 PSI ΔP, Multiply values by 1.4

⁵ Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

Liquid Refrigerant Holding Capacity-Ounces

Unit Size	R-22		R-407C		R-410A		R-744	
	75°F	125°F	75°F	125°F	75°F	125°F	20°F	-20°F
05	4.6	4.2	4.4	3.9	4.1	3.5	3.7	4.1
08	7.7	6.9	7.3	6.4	6.9	5.8	6.2	6.9
16	14.2	12.7	13.5	11.8	12.6	10.6	11.4	12.7
30	21.0	18.7	20.0	17.4	19.6	16.5	16.8	18.7

BOK-HH Liquid Line Burnout Filter Drier

The BOK-HH is a liquid line filter drier for burnout clean-up and wax removal. The BOK-HH incorporates an activated carbon blended solid core for the effective clean-up of systems following a severe burnout.

Features

- Designed for maximum effectiveness in the clean-up of systems following a severe burnout
- Corrosion resistant epoxy powder paint finish
- Activated carbon blend for soluble contaminant and wax removal
- Solid copper connections
- R-410A compatible

Nomenclature example: BOK 305S-HH

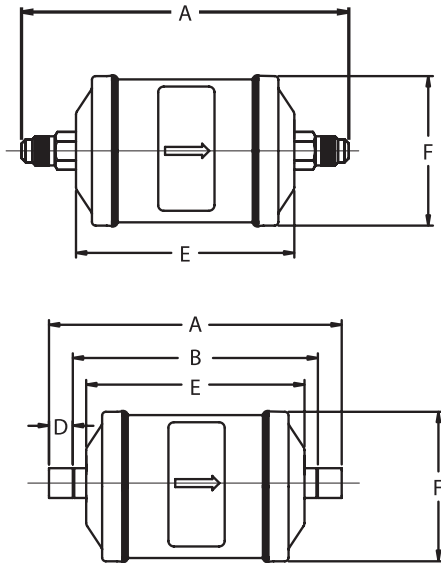
BOK	30	5	S	HH
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF connections (omit for SAE)	Activated carbon Blend



Specifications

- Filtration: 40 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124

Dimensional Data



Ordering Information

PCN	Description	Connection Size	Dimensions (in)					Weight (lbs)
			A	B	D	E	F ¹	
060223	BOK-082-HH	1/4 SAE	5.660	--	--	3.850	2.50	1.00
064591	BOK-082SH	1/4 ODF	4.990	4.290	0.346	3.850	2.50	
060224	BOK-083-HH	3/8 SAE	5.970	--	--	3.850	2.50	
057955	BOK-083SH	3/8 ODF	5.300	4.070	0.621	3.850	2.50	
060240	BOK-162-HH	1/4 SAE	6.412	--	--	4.598	3.00	
064592	BOK-162S-HH	1/4 ODF	6.230	5.474	0.381	4.598	3.00	
060241	BOK-163-HH	3/8 SAE	6.724	--	--	4.598	3.00	2.00
060242	BOK-163S-HH	3/8 ODF	6.060	5.260	0.401	4.598	3.00	
060228	BOK-164-HH	1/2 SAE	6.944	--	--	4.598	3.00	
060229	BOK-164S-HH	1/2 ODF	6.159	5.159	0.500	4.598	3.00	
060230	BOK-165-HH	5/8 SAE	7.398	--	--	4.598	3.00	
060231	BOK-165S-HH	5/8 ODF	6.379	5.129	0.625	4.598	3.00	
060232	BOK-303-HH	3/8 SAE	9.664	--	--	7.540	3.00	3.75
060233	BOK-304-HH	1/2 SAE	9.884	--	--	7.540	3.00	
060234	BOK-304S-HH	1/2 ODF	9.101	8.101	0.500	7.540	3.00	
060235	BOK-305-HH	5/8 SAE	10.340	--	--	7.540	3.00	
060236	BOK-305S-HH	5/8 ODF	9.321	8.071	0.625	7.540	3.00	4.75
060237	BOK-414-HH	1/2 SAE	9.944	--	--	7.600	3.50	
060238	BOK-415-HH	5/8 SAE	10.400	--	--	7.600	3.50	
060239	BOK-417S-HH	7/8 ODF	9.963	8.462	0.750	7.600	3.50	
064593	BOK-415S-HH	5/8 ODF	9.381	8.131	0.625	7.600	3.50	

¹ Does not include weld bead

Standard Product Offering

BOK-HH Liquid Line Burnout Filter Drier

Description	Connections	Flow Capacity Tons @ 1 psi ΔP ^{1,4} (For kW, multiply tons by 3.5)							Water Capacity ² Drops Of Water ³															
		R-12		R-134a		R-22		R-407C		R-410A		R-404A/R-507		R-502		R-744								
		75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	-10°F	25°F							
BOK 08 2-HH	1/4 SAE	1.2	1.5	1.6	1.6	1.6	1.1	2.1	180	118														
BOK 082SH	1/4 ODF	-	3.1	3.4	3.4	3.3	2.2	4.4	-	-	88	71	78	59	74	45	66	38	93	71	109	79	51	63
BOK 08 3-HH	3/8 SAE	3.2	3.9	4.2	4.2	4.1	2.8	5.4	180	118														
BOK 083SH	3/8 ODF	-	4.2	4.6	4.6	4.5	3.0	5.9	-	-														
BOK 16 2-HH	1/4 SAE	1.2	1.5	1.6	1.6	1.6	1.1	2.1																
BOK 16 3-HH	3/8 SAE	3.6	4.3	4.7	4.7	4.6	3.1	6.1																
BOK 16 3S-HH	3/8 ODF	4.8	5.8	6.3	6.3	6.2	4.2	8.1																
BOK 16 4-HH	1/2 SAE	7.0	8.6	9.3	9.3	9.1	6.2	12.0	209	143	171	141	153	117	91	56	77	41	182	141	135	100	93	113
BOK 16 4S-HH	1/2 ODF	8.4	10.2	11.1	11.1	10.9	7.4	14.3																
BOK 16 5-HH	5/8 SAE	10.5	12.8	13.9	13.9	13.6	9.3	17.9																
BOK 16 5S-HH	5/8 ODF	10.5	12.8	13.9	13.9	13.6	9.3	17.9																
BOK 30 3-HH	3/8 SAE	3.6	4.3	4.7	4.7	4.6	3.1	6.1																
BOK 30 4-HH	1/2 SAE	8.1	9.9	10.7	10.7	10.5	7.2	13.8																
BOK 30 4S-HH	1/2 ODF	8.9	10.8	11.7	11.7	11.5	7.8	15.1	552	367	300	245	267	204	234	146	160	94	318	247	342	249	167	203
BOK 30 5-HH	5/8 SAE	11.1	13.5	14.6	14.6	14.3	9.8	18.8																
BOK 30 5S-HH	5/8 ODF	12.0	14.6	15.8	15.8	15.5	10.6	20.4																
BOK 41 4-HH	1/2 SAE	8.4	10.2	11.1	11.1	10.9	7.4	14.3																
BOK 41 5-HH	5/8 SAE	13.4	16.3	17.7	17.7	17.4	11.8	22.8																
BOK 41 5S-HH	5/8 ODF	13.4	16.3	17.7	17.7	21.1	14.4	22.8	623	410	427	344	379	282	256	155	220	125	454	342	380	274	249	305
BOK 41 7S-HH	7/8 ODF	16.3	19.8	21.5	21.5	21.1	14.4	27.7																

¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature
 5°F saturated vapor temperature
 3.1 lbs./min./ton for R-134a
 2.9 lbs./min./ton for R-22 and R-407C
 4.0 lbs./min./ton for R-404A/507 and R-12
 2.7 lbs./min./ton for R-410A

² Water Capacities are based on:
 Equilibrium Point Dryness (EPD) of:
 50 parts per million for R-134a, R404-A/507,
 R-410A and R-407C
 60 parts per million for R-22
 15 parts per million for R-12

³ 20 drops of water = 1 gram = 1 cc

⁴ For 2 PSI ΔP, Multiply values by 1.4

⁵ Since there is currently no ARI standard for R-744,
 values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

Liquid Refrigerant Holding Capacity - Ounces

Unit Size	R-12		R-134a/R-450A/R-513A		R-22/R-448A/R-449A		R-407C		R-410A		R-404A/507		R-502		R-744	
	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	20°F	-20°F
08	7.3	6.6	6.7	6.0	6.6	5.9	6.3	5.5	5.9	4.9	5.8	4.9	6.7	5.9	5.3	5.9
16	13.9	12.7	12.8	11.5	12.6	11.3	12.0	10.5	11.2	9.4	11.1	9.3	12.9	11.3	10.1	11.3
30	21.8	19.9	20.1	18.1	19.8	17.8	18.9	16.6	11.7	14.9	17.4	14.7	20.2	17.7	16.0	17.7
41	29.3	26.8	26.9	24.4	26.6	23.9	25.4	22.3	23.7	20.0	23.3	19.7	27.2	23.8	21.4	23.8

ALF Liquid Filter

The ALF is a liquid line refrigerant filter for recovery, recycle and reclaim usage. The ALF is also used for protecting solenoid and expansion valve parts from debris.

Features

- Filtering media that maximizes removal of finer particles
- Corrosion resistant epoxy powder paint finish



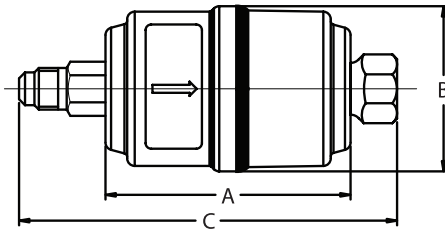
Nomenclature example: ALF 033S

ALF	03	3	S
Series	Unit Size	Connection Size Inlet (in 1/8")	Connection Style S = ODF Omit for SAE

Specifications

- Filtration: 40 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124

Dimensional Data



Ordering Information

PCN	Description	Dimensions (in)			
		Connection Size Inlet/Outlet	A	B ¹	C
056618	ALF-032S	1/4 ODF	2.56	1.63	3.88
057193	ALF-032MF	1/4 SAE Male In 1/4 SAE Female Out			4.00
057140	ALF-033S	3/8 ODF			4.13
056645	ALF-034S	1/2 ODF			

¹ Does not include weld bead

Standard Product Offering

Recovery, Recycle and Reclaim Refrigerant Flow Capacity (lbs./min. liquid)		
R-134A R-134a/R-450A/R-513A	R-22/R-410A /R-448A/R-449A	R-404A/R-507
7.6	8.0	8.0

Spun Copper Liquid Line Filter Drier

The CU series is a high capacity spun copper solid core Filter Drier ideal for superior corrosion resistance in ocean going vessels and coastal applications.



Features

- All copper construction for extreme corrosion resistance
- 100% molecular sieve solid core drier
- For use with CFC, HCFC and HFC refrigerants

Nomenclature example: CU 163S

CU	16	3	S
Series	Unit Size	Connection Size (in 1/8")	ODF

Specifications

- Maximum working pressure: 500 psig
- Filtration: 40 microns
- UL/CUL file number: SA 7175

Ordering Information and Capacity Tables

PCN	Description	Connection	Flow Capacity Tons @ 1 psi ΔP ¹⁴ (For kW, multiply tons by 3.5)					Water Capacity ² Drops of Water ³												
			R-12	R-134a R-450A R-513A	R-22 R-448A R-449A	R-407C	R-404A R-507	R-12		R-134a		R-22		R-407C		R-404A/R-507		R-502		
								75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	
064389	CU 03 3 S	3/8 ODF	2.1	2.6	2.8	2.7	1.9	96	87	93	87	87	81	72	57	96	93	90	81	
064393	CU 08 3 S	3/8 ODF	2.9	3.5	3.8	3.7	2.5	212	191	205	191	191	177	156	122	212	205	198	177	
064394	CU 08 4 S	1/2 ODF	3.5	4.2	4.6	4.5	3.1													
064395	CU 16 3 S	3/8 ODF	3.3	4.0	4.3	4.2	2.9	287	257	277	257	257	237	207	158	287	277	267	237	

Standard Product Offering

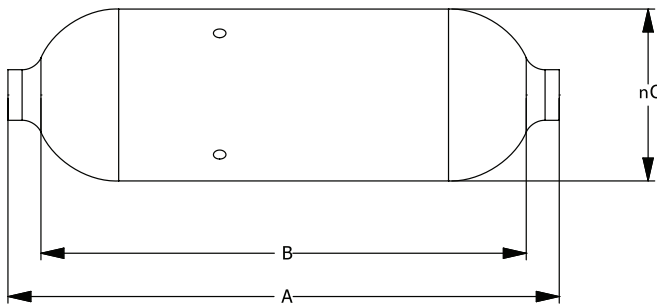
¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature
5°F saturated vapor temperature
3.1 lbs./min./ton for R-134a
2.9 lbs./min./ton for R-22 and R-407C
4.0 lbs./min./ton for R-404A/507 and R-12
2.7 lbs./min./ton for R-410A

² Water Capacities are based on:
Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/507,
R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12

³ 20 drops of water = 1 gram = 1 cc

⁴ For 2 PSI ΔP, Multiply values by 1.4

Dimensional Data (in)



Description	Overall Length (A)	Lay-In Dimension (B)	Diameter
CU 03	3.94	3.25	1.63
CU 05	5.19	4.50	1.63
CU 08	6.06	5.38	2.00
CU 16	6.63	6.00	2.00

Spun Copper Liquid Line Service Filter Drier

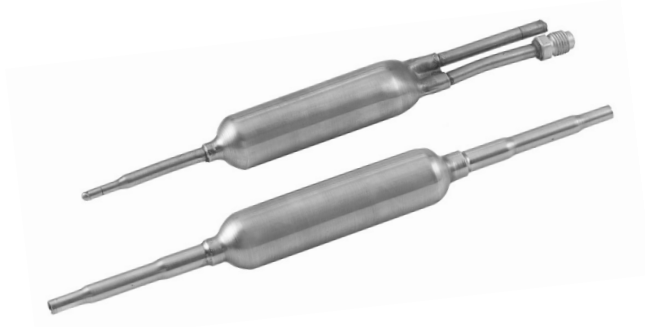
Recommended for use in original equipment or replacement residential, air-conditioning or refrigeration equipment.

Features

- All copper construction for extreme corrosion resistance
- 100% molecular sieve solid core drier
- For use with CFC, HCFC and HFC refrigerants

Specifications

- Maximum working pressure: 500 psig
- Filtration: 100 microns
- UL/CUL file number: SA 7175



Ordering Information and Capacity Tables

PCN	Description	Parker Equivalent	Connections		Flow Capacity Tons @ 1 psi ΔP ¹⁴ (For kW, multiply tons by 3.5)			Water Capacity ² Drops of Water ³					
								R-134a		R-22		R-404A/R-507	
			Inlet	Outlet	R-12 R-134a R-450A R-513A	R-22 R-410A R-448A R-449A	R-404A/R-507	75°F	125°F	75°F	125°F	75°F	125°F
064023	CU-80	MMS-80	1/4 ODF	1/4 ODF	.33	.5	.33	25	23	25	22	23	23
064026	CU-619	620-SP	1/4 ODF	Cap	.5	.5	1.5	25	23	25	22	23	23
064027	CU-620	620	5/16 ODF	Cap	1.0	2.0	1.0	50	46	50	44	46	46
064119	CU-621	621	5/16 ODF	Cap	.5	.5	1.5	50	46	50	44	46	46
064024	CU-200	MMS-200	5/16 ODF, 3/8 ODF	5/16 ODF, 3/8 ODF	.75	1.0	.75	50	46	50	44	46	46
064025	CU-319	319	5/16 ODF	Cap	1.0	2.0	1.0	75	66	75	66	69	69

Standard Product Offering

¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature
5°F saturated vapor temperature
3.1 lbs./min./ton for R-134a
2.9 lbs./min./ton for R-22 and R-407C
4.0 lbs./min./ton for R-404A/507 and R-12
2.7 lbs./min./ton for R-410A

² Water Capacities are based on:
Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/507,
R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12

³ 20 drops of water = 1 gram = 1 cc

⁴ For 2 PSI ΔP, Multiply values by 1.4

Dimensional Data (in)

Description	Length	Diameter
CU-80	7 3/8	3/4
CU-619	8 7/8	3/4
CU-620	9 1/2	1
CU-621	9	1
CU-200	10 1/2	1
CU-319	9 3/4	1 3/16

STAS Steel Liquid and Suction Line Filter Drier

STAS CO Steel Liquid and Suction Line Filter Drier for CO²

The STAS is a replaceable core filter drier for CFC, HCFC, and HFC refrigerants for use in large commercial air conditioning and refrigeration systems. The STAS-CO is specifically designed for CO² (R-744) systems.

Features

- Slotted cover/unique internal hardware for hassle-free installation
- Full flow fittings for low pressure drop
- Corrosion resistant epoxy powder paint finish
- Sturdy steel shells for long life
- Solid copper connections
- 100 mesh outlet screen

Nomenclature example: STAS 489T

STAS	48	9	T
Steel Take-Apart Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	System Service T = Liquid Line Service SV = Suction Line Service



Specifications

- Filtration (with core): 40 microns
- Maximum working pressure: SV version = 500 psig
T version = 680 psig
- UL/CUL file number: SA7175

STAS Models are shipped without filter or filter drier cores. See filter or filter drier cores for availability. Uses 48 cubic inch cores.

STAS Ordering Information

PCN	Description	Connection Size	Number Of 48 in ³ Cores	Desiccant Volume (Cu. In.)	Dimensions (in)					
					A	B	C	D		
053001	STAS-485T	5/8 ODF	1	48	9.94	6.00	3.78	0.63		
053003	STAS-487T	7/8 ODF			9.69	6.25	3.75	0.78		
053005	STAS-489T	1 1/8 ODF			9.75	6.31	3.84	0.94		
053007	STAS-4811T	1 3/8 ODF			9.84	6.44	3.97	0.94		
053043	STAS-4813S-V ¹	1 5/8 ODF			9.88	6.02	4.03	1.13		
053044	STAS-4817S-V ¹	2 1/8 ODF			10.06	6.56	4.56	1.34		
053045	STAS-4821S-V ¹	2 5/8 ODF			10.44	7.03	4.75	1.04		
053375	STAS-4813T	1 5/8 ODF			9.88	6.50	4.03	1.13		
053938	STAS-4811SV	1 3/8 ODF			9.84	6.44	3.97	0.94		
053010	STAS-967T	7/8 ODF			2	96	15.19	11.72	3.75	0.78
053012	STAS-969T	1 1/8 ODF	15.22	11.78			3.84	0.94		
053014	STAS-9611T	1 3/8 ODF	15.31	11.91			3.97	1.03		
053017	STAS-9613T	1 5/8 ODF	15.38	11.97			4.03	1.13		
053018	STAS-9617T	2 1/8 ODF	15.56	12.03			4.56	1.34		
053047	STAS-9617S-V ¹	2 1/8 ODF	15.56	12.03			4.56	1.34		
053048	STAS-9621S-V ¹	2 5/8 ODF	15.94	12.50			4.75	1.50		
059739	STAS-9625 SV ¹	3 1/8 ODF	16.54	12.63			5.44	1.66		
053020	STAS-1449T	1 1/8 ODF	3	144			21.25	17.38	3.84	0.94
053022	STAS-14411T	1 3/8 ODF					21.34	17.53	3.97	1.03
053024	STAS-14413T	1 5/8 ODF			21.38	17.59	4.03	1.13		
053025	STAS-14417T	2 1/8 ODF			21.56	17.63	4.56	1.34		
053028	STAS-19211T	1 3/8 ODF			26.91	23.00	3.97	1.03		
053030	STAS-19213T	1 5/8 ODF			26.94	23.17	4.03	1.13		
053031	STAS-19217T	2 1/8 ODF			27.13	23.13	4.56	1.34		
056213	STAS-1927/5T	7/8 X 5/8			26.50	6.00	3.69	0.78/0.63		

¹"SV" style include stainless steel bolts and access valve.

Note: "T" style can be used for suction by removing pipe plug and installing X-11562-2.

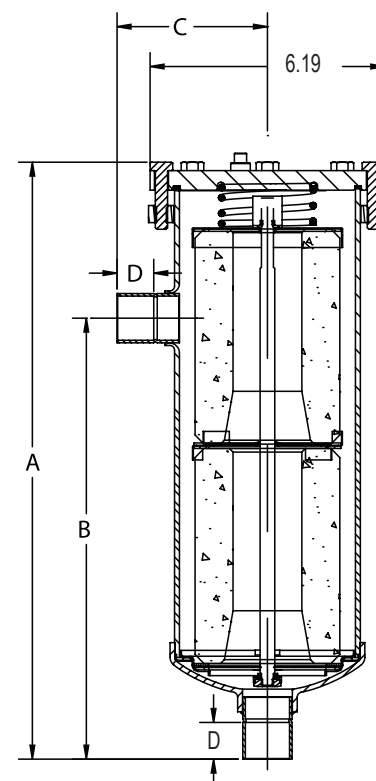
Standard Product Offering

STAS-CO Ordering Information

PCN	Description	Connection Size	Number of 48 in ³ Cores	Desiccant Volume (Cu. In.)	Dimensions (In)			
					A	B	C	D
066725	STAS-CO485T	5/8 ODF	1	48	9.37	6.06	3.78	0.50
066726	STAS-CO487T	7/8 ODF	1	48	9.50	6.25	3.74	0.75
066727	STAS-CO489T	1 1/8 ODF	1	48	9.60	6.30	3.85	0.91
066728	STAS-CO969T	1 1/8 ODF	2	96	15.20	11.90	3.85	0.91
066729	STAS-CO9611T	1 3/8 ODF	2	96	15.35	12.04	3.97	0.97

Note: STAS-CO has UL approval for use with CO² (R-744) at a maximum working pressure of 680 psig.

Dimensional Data



STAS Steel Liquid and Suction Line Filter Drier

STAS CO Steel Liquid and Suction Line Filter Drier for CO²

Description	Connections	Liquid Flow Capacity Tons @ 1 psi ΔP ^{1,2,3}				
		R-134a R-450A R-513A	R-22 R-410A R-448A R-449A	R-407C	R-404A R-507	R-744 ⁴
STAS-485T	5/8 ODF	21	22	21	15	28
STAS-487T	7/8 ODF	38	41	39	27	53
STAS-489T	1 1/8 ODF	53	58	56	38	75
STAS-4811T	1 3/8 ODF	75	81	78	53	
STAS-4813T	1 5/8 ODF	81	89	85	58	
STAS-967T	7/8 ODF	42	45	43	30	
STAS-969T	1 1/8 ODF	65	71	68	47	92
STAS-9611T	1 3/8 ODF	80	87	83	57	112
STAS-9613T	1 5/8 ODF	92	100	95	65	
STAS-1449T	1 1/8 ODF	66	72	69	47	
STAS-14411T	1 3/8 ODF	92	100	96	65	
STAS-14413T	1 5/8 ODF	93	101	97	66	
STAS-14417T	2 1/8 ODF	110	120	115	78	
STAS-19211T	1 3/8 ODF	94	102	98	67	
STAS-19213T	1 5/8 ODF	103	113	108	74	
STAS-19217T	2 1/8 ODF	113	123	117	80	

¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature

- 5°F saturated vapor temperature
 - 3.1 lbs./min./ton for R-134a
 - 2.9 lbs./min./ton for R-22 and R-407C
 - 4.0 lbs./min./ton for R-404A/507 and R-12

² For 2 PSI ΔP, Multiply values by 1.4

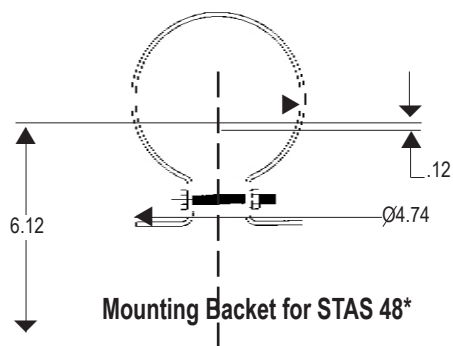
³ For kW, multiply by 3.5

⁴ R-744: Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration at 20°F saturated vapor temperature

Replacement Parts For STAS

Flange Cover Assembly	Description	PCN
All STAS Driers - Include Flange Cover, Compression Spring, Pipe Plug, and Grade 5 Bolts	X12176-3	054046
Shell Strainer Assembly		
STAS-48	X27458-1	060274
STAS-96	X27458-2	060275
STAS-144	X27458-3	060276
STAS-192	X27458-4	060277
Miscellaneous Parts		
Cover Bolts (Stainless Steel - suction line service)	X25787-7	053121
Access Valve (V Option)	X11562-2	037409
Gasket Set (Includes cover gasket)	X11983-1	027453
Handle	26446-1	053812
Inlet Retainer	26477-1	053813
Spring	26439-1	060258
Mounting Bracket	X28747-1	061715

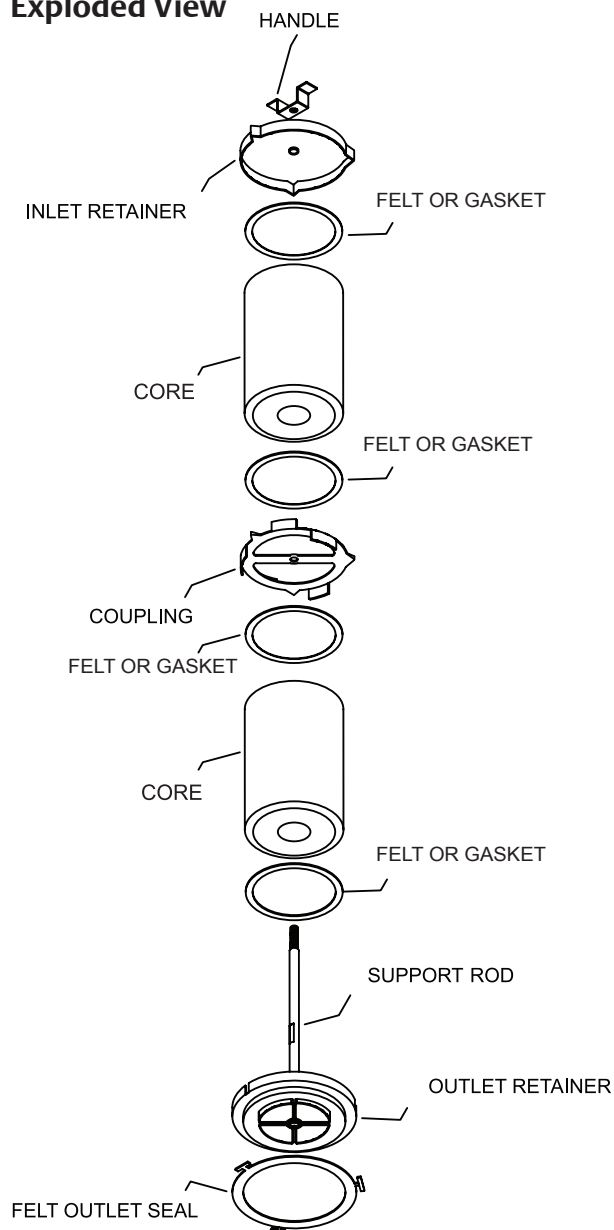
Standard Product Offering



Mounting Bracket for STAS 48*

*More than one mounting bracket may be required for shell sizes 96 and above.

Exploded View



Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

ADKS Liquid and Suction Line Filter Drier

The ADKS is a replaceable core filter drier for use with CFC, HCFC, and HFC refrigerants in very large commercial air conditioning and refrigerant systems.

Features

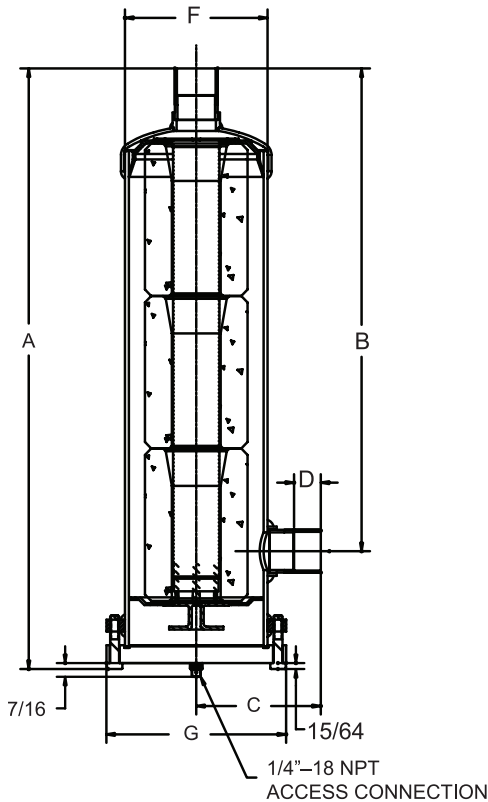
- Full flow fittings for low pressure drop
- Corrosion resistant epoxy powder paint finish
- Sturdy steel shells for long life durability



Nomenclature example: ADKS 30013T

ADKS	300	13	T
System Protector Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	T = Tap Access Connection

Dimensional Data



Specifications

- Filtration (with core): 40 microns
- Maximum working pressure: 500 psig*
- UL/CUL file number: SA 3124
- Bolt Torque: 35 ft-lbs

*Note: Not suitable for R-410A applications above 500 psig.

Ordering Information

PCN	Description	Connection Size	Number Of 100 in ³ Cores	Dimensions (in)						Weight (lbs)
				A	B	C	D	F*	G	
026570	ADKS-30013T	1 5/8 ODF	3	25.27	20.32	5.24	1.13	6.00	7.56	39.00
037978	ADKS-30017T	2 1/8 ODF		25.41	20.45	5.43	1.66			
032105	ADKS-40017T	2 1/8 ODF	4	31.91	26.95	5.43	1.66	6.00	7.56	46.00
037570	ADKS-40021T	2 5/8 ODF		32.81	27.86	6.19	1.47			

* Does not include weld bead

¹ "H" Dimension is the clearance required to change the internal hardware assembly

T = 1/4" FPT access connection

ADKS Models are shipped without filter cores or filter drier cores. See filter or filter drier cores for availability. Uses 100 cubic inch cores.

ADKS Liquid and Suction Line Filter Drier

Capacity Tables (in Tons)

Liquid Line for Replaceable Block Type ADKS Filter Driers

Description	Connection	Flow Capacity In Tons @ 1 psi ΔP ^{1, 2}					
		R-12	R-134a R-450A R-513A	R-22 R-410A R-448A R-449A	R-407C	R-404/507	R-502
ADKS 30013T	1 5/8 ODF	83	102	110	108	73	49
ADKS 30017T	2 1/8 ODF	121	148	160	157	107	59
ADKS 40017T	2 1/8 ODF	128	157	170	167	114	63
ADKS 40021T	2 5/8 ODF	136	166	180	177	120	71

¹ All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature
5°F saturated vapor temperature
3.1 lbs./min./ton for R-134a
2.9 lbs./min./ton for R-22 and R-407C
4.0 lbs./min./ton for R-404A/507 and R-12

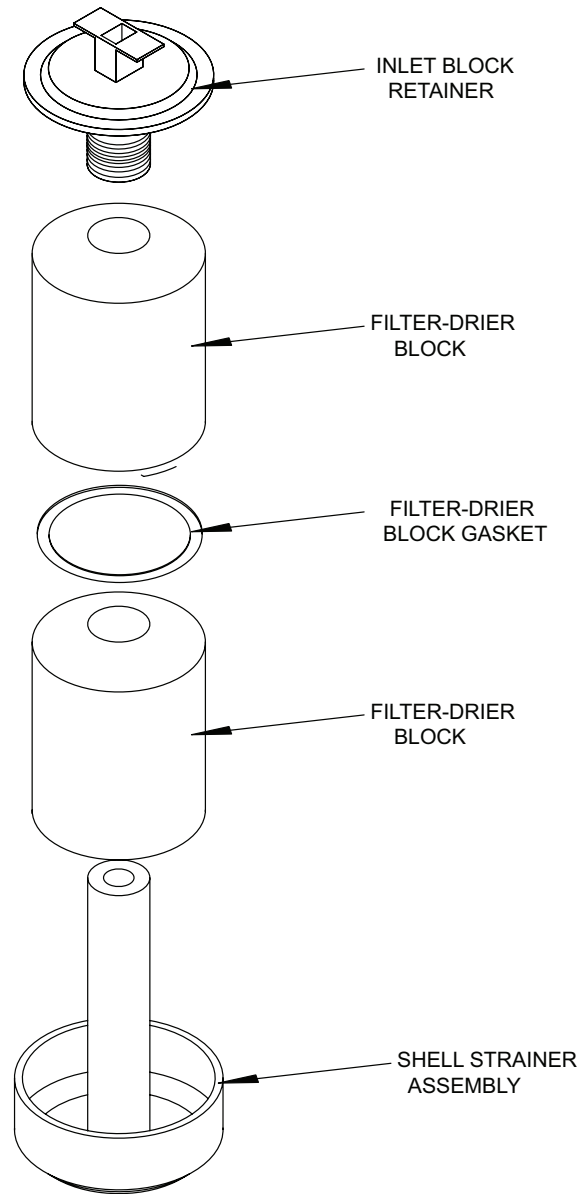
² For 2 PSI ΔP. Multiply values by 1.4

Replacement Parts

Flange Cover	Description	PCN
ADKS-300, ADKS-400	X12176-2	027467
Shell	Strainer	Assembly
ADKS-300	X10574-5	039967
ADKS-400	X10574-6	038315
Miscellaneous Parts		
Gasket Set (Includes cover gasket)	X-11983-2	027454

Standard Product Offering

Exploded View



Filter Drier Cores and Filters

Universal replacement cores and filter cores for use in our ADKS and STAS shells and similar competitive Take-Apart type filter drier shells. May not be used for BTAS.



Features

- Water capacities to suit specific system conditions
- Exceptional acid capacities for normal system protection, or to effectively clean-up following a compressor burnout
- Activated carbon blend for soluble contaminant and wax removal (W-HH Series)

Nomenclature

example: H 48

H	48
Series	Cubic Inch

Specifications

- Interchangeable with competitive products
- 48 cubic inch cores used in STAS
- 100 cubic inch cores used in ADKS

NOTE: Filter Drier cores are suitable for use with R-11 AND R-123 but filters are NOT.

Ordering Information and Capacity Tables

PCN	Description ³	Recommended Refrigerant Type	Function	Water Capacity ¹ Drops of Water ²													
				R-134a		R-22		R-407C		R-404A/R-507		R-410A		R-502		R-744	
				75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	14°F	75°F
061617	UK-48	CFC, HCFC, HFC	Premium Universal Replacement	1272	1168	1181	1072	1033	786	1319	1241	976	707	1332	1150	1184	1388
059541	D-48	CFC, HCFC	High Acid Removal	415	340	363	254	225	95	457	343	210	86	388	225	186	218
059542	H-48	CFC, HCFC	High Acid and Water Removal	676	538	597	436	445	285	721	535	380	226	643	475	274	321
061235	W-48-HH	CFC, HCFC, HFC	Burnout Cleanup	387	294	335	226	290	165	417	289	249	130	444	306	328	386
089338	H-100	CFC, HCFC	High Acid and Water Removal	1112	834	962	673	726	418	1199	839	672	364	1109	758		
062549	HX-48	CFC, HCFC, HFC	Highest Water Removal	1710	1600	1600	1491	1459	1161	1765	1710	1280	930	1932	1744		
062424	UK-100	CFC, HCFC, HFC	Universal Replacement	2769	2550	2574	2345	2182	1682	2868	2710	-	-	2787	2437		
043582	W-100-HH	CFC, HCFC, HFC	Burnout Cleanup	1077	812	938	621	629	363	1162	792	573	307	960	663		
089559	F-48	CFC, HCFC, HFC	Filter (Suction Only)	N/A													
047664	F-48R	CFC, HCFC, HFC	Filter (Suction Only) Reverse Flow														
095762	F-100	CFC, HCFC, HFC	Filter (Suction Only)														
061237	RH-48	CFC, HCFC	Refrigerant Reclaim - Max. Moisture Removal	1096	920	1037	790	750	530	1090	940	650	420	643	475		
061238	RW-48	CFC, HCFC	Refrigerant Reclaim - Max. Acid Removal	583	493	532	380	380	230	600	482	350	197	444	306		

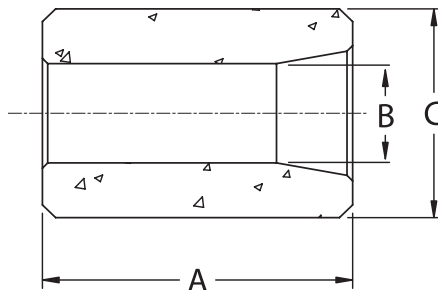
¹ Water Capacities are based on:
Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12

² 20 drops of water = 1 gram = 1 cc

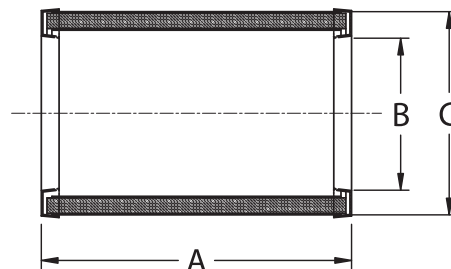
³ D-42, H-42 and W-42 include one neoprene composite lid gasket and one core gasket. All other cores include a universal neoprene composite gasket kit which includes 2 sizes of replacement lid gaskets, and gaskets for the top and bottom of the core or filter.

Standard Product Offering

Dimensional Data



Filter Drier Block Size	Dimensions			Weight (lbs)
	A	B	C	
42	6.00	1.58	3.12	1.00
48	5.50	1.77	3.72	1.50
100	6.50	2.06	4.81	4.00



Catalog Number	Dimensions			Weight (lbs)
	A	B	C	
F-48/F-48R	5.50	2.81	3.88	0.75
F-100	6.50	3.75	4.81	1.50

BTAS Brass Take-Apart Suction Line Filter Drier

The BTAS is a replaceable core filter drier for suction line services ideal for commercial refrigeration applications.

Features

- Full flow fittings for low pressure drop
- Corrosion resistant brass body with stainless steel bolts
- Special cartridge design exclusive to brass shell



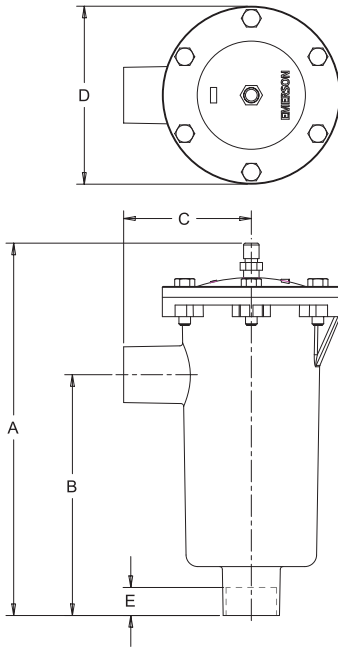
Nomenclature example: BTAS 311SV

BTAS	3	11	SV
Brass Take-Apart Series	Unit Size	Connection Size (in 1/8")	Suction Line Service

Specifications

- Filtration: 40 microns
- Maximum working pressure: 400 psig
- UL/CUL file number: SA 3124

Dimensional Data



Ordering Information

PCN	Description	Connection Size	Nominal Shell Size (in)	Dimensions (in)					Weight (lbs)
				A	B	C	D	E	
049462	BTAS-27 S-V	7/8 ODF	2	9.75	6.57	2.19	3.75	0.75	6.75
049465	BTAS-39 S-V	1 1/8 ODF	3	10.31	6.81	3.31	4.63	0.91	10.25
049466	BTAS-311 S-V	1 3/8 ODF		11.06	6.94	3.44		0.97	10.50
049467	BTAS-313 S-V	1 5/8 ODF		11.25	7.13	3.63		1.09	11.00
049468	BTAS-317 S-V	2 1/8 ODF		11.50	7.38	3.88		1.34	11.20
064169	BTAS-411 S-V	1 3/8 ODF	4	11.41	7.81	4.13	5.75	0.78	16.20
049470	BTAS-413 S-V	1 5/8 ODF		12.03	7.81	4.13		1.09	16.75
049471	BTAS-417 S-V	2 1/8 ODF		12.28	8.06	4.13		1.34	17.20
049472	BTAS-421 S-V	2 5/8 ODF		12.41	8.19	4.94		1.47	18.00
049473	BTAS-517 S-V	2 1/8 ODF	5	13.44	8.41	4.19	7.09	1.34	28.75
049474	BTAS-521 S-V	2 5/8 ODF		13.56	8.47	4.94		1.47	29.00
049475	BTAS-525 S-V	3 1/8 ODF		13.25	8.16	4.63		1.66	29.25

BTAS models are shipped without filter cartridge or Filter Drier cartridge.

Standard Product Offering

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

BTAS Brass Take-Apart Suction Line Filter Drier

Type A-F Replaceable Filter Cartridges

PCN	Filter Core	For Shell No.	Core O.D.	Core Length	Filter Area (Sq. In.)	Weight (lbs)
049479	A2F	BTAS-2	1 29/32	6 3/8	66	0.33
049480	A3F	BTAS-3	2 3/4	6 7/8	115	0.50
049481	A4F	BTAS-4	3 3/4	7 1/2	189	0.88
049482	A5F	BTAS-5	4 5/16	8 1/2	270	1.00

Type A-F-D Replaceable Filter Drier Cartridges

PCN	Filter Drier Cartridge	For Shell No.	Cartridge O.D.	Cartridge Length	Desiccant Volume (Cu. In.)	Weight (lbs)
049483	A2F-D	BTAS-2	1 29/32	6 3/8	4.2	0.50
049484	A3F-D	BTAS-3	2 3/4	6 7/8	13.3	0.88
049485	A4F-D	BTAS-4	3 3/4	7 1/2	26.0	1.20
049486	A5F-D	BTAS-5	4 5/16	8 1/2	36.5	1.20

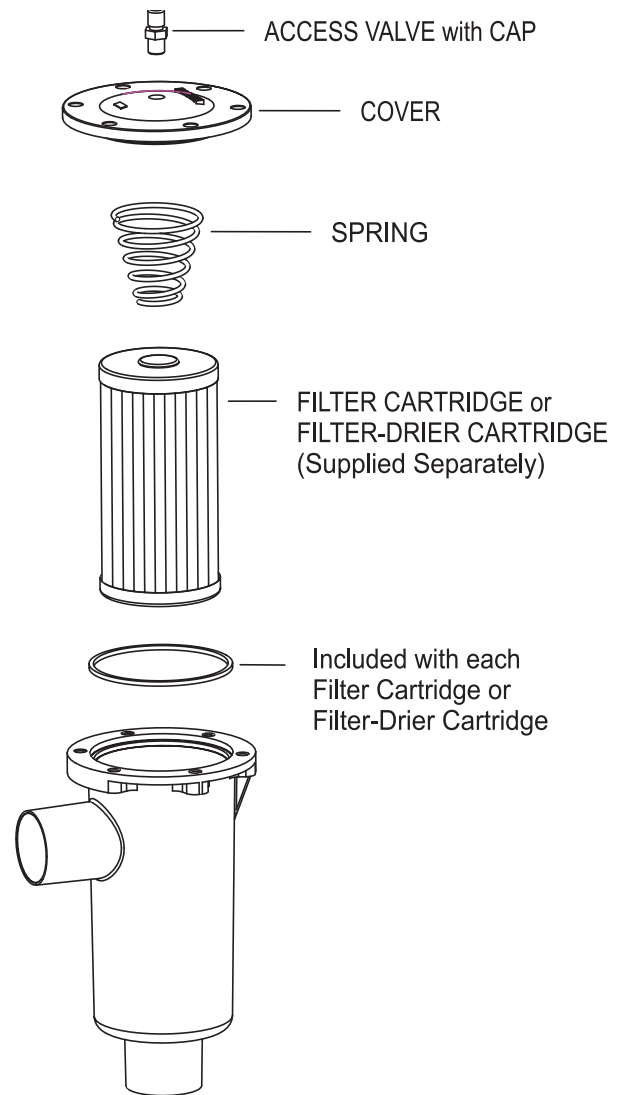
Replacement Parts*

Misc. Parts	Description	PCN
Access Valve	X11562-2	037409
BTAS 2 Repair Kit*	KD-30519-2	065970
BTAS 3 Repair Kit*	KD-30519-3	065971
BTAS 4 Repair Kit*	KD-30519-4	065972
BTAS 5 Repair Kit*	KD-30519-5	065973
BTAS 2 Seal Ring Kit	KD-40015-1	066430
BTAS 3 Seal Ring Kit	KD-40015-2	066431
BTAS 4 Seal Ring Kit	KD-40015-3	066432
BTAS 5 Seal Ring Kit	KD-40015-4	066433

* Repair kits contain cover bolts, cover, spring and seal ring.

Standard Product Offering

Exploded View



BTAS models are shipped without filter cartridge or Filter Drier cartridge.

ASD Premium Suction Line Filter Drier

The ASD is a premium suction line filter drier for use with CFC, HCFC and HFC refrigerants. The ASD is optimized for high moisture, acid, and solid contaminant removal.

Features

- Outstanding filtration for ultimate compressor protection
- Dual access valves for easy pressure readings
- Solid copper connections
- Corrosion resistant epoxy powder paint finish



Specifications

- Filtration: 40 microns
- Maximum working pressure: 500 psig
- UL/CUL file number: SA 3124

Nomenclature example: ASD 35S5VV

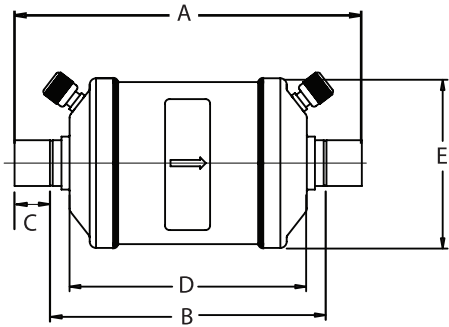
ASD	35	S	5	VV
Series	Unit Size (in cu. in.)	Connections S = ODF F = SAE	Connection Size (in 1/8")	Dual Access Valves

Ordering Information

PCN	Description	Connection Size	Dimensions (in)					Weight (lbs)
			A	B	C	D	E	
056352	ASD 28F3	3/8 SAE	5.59	--	0.44	4.13	3.69	2.00
049168	ASD 28S3-W	3/8 ODF	5.59	4.72	0.44	4.13		
049169	ASD 28S4-W	1/2 ODF	5.69	4.69	0.50	4.13		
049170	ASD 35F5-W	5/8 SAE	7.56	--	--	4.75		2.50
049171	ASD 35S5-W	5/8 ODF	6.22	5.28	0.63	4.75		3.00
049172	ASD 45S6-W	3/4 ODF	7.75	6.50	0.63	5.56		3.50
049173	ASD 45S7-W	7/8 ODF	7.94	6.44	0.75	5.56		5.00
049174	ASD 50S9-W	1 1/8 ODF	8.84	7.03	0.91	6.13		3.50
049175	ASD 75S11-W	1 3/8 ODF	12.25	10.31	0.97	8.25		5.00
049176	ASD 75S13-W	1 5/8 ODF	12.16	9.91	1.13	8.25		5.00

Standard Product Offering

Dimensional Data



SFD Suction Line Filter Drier

The SFD is a standard suction line filter drier for use after a burnout or when major work has been performed. It is for use with CFC, HCFC and HFC refrigerants.

Features

- Solid copper connections
- Dual access valves for easy pressure readings
- Corrosion resistant epoxy powder paint finish
- R-410A compatible



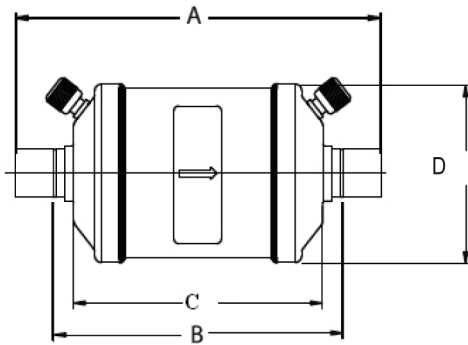
Nomenclature example: SFD 13S5-VV

SFD	13	S	5	VV
Series	Unit Size (in cu. in.)	Connections S = ODF F = SAE	Connection Size (in 1/8")	Dual Access Valves

Specifications

- Filtration: 40 microns
- Maximum working pressure: 500 psig
- UL/CUL file number: SA 3124

Dimensional Data



Order Information

PCN	Description	Connection Size	Dimensions (in)				Weight (lbs)
			A	B	C	D	
064045	SFD 08S4-VV	1/2 ODF	4.94	3.94	3.38	3.14	2
064046	SFD 08S5-VV	5/8 ODF	5.16	3.91			
064047	SFD 08S6-VV	3/4 ODF	5.56	4.31			
060244	SFD 13F3-VV	3/8 SAE	5.50	N/A	3.64	3.14	
060245	SFD 13S3-VV	3/8 ODF	4.84	3.97			
060246	SFD 13S4-VV	1/2 ODF	4.94	3.94			
060247	SFD 13S4-VV	1/2 ODF	5.75	N/A	3.64	3.14	
060248	SFD 13F5-VV	5/8 SAE	6.13	N/A			
060249	SFD 13S5-VV	5/8 ODF	5.16	3.91			
060250	SFD 13S6-VV	3/4 ODF	5.25	4.00	5.13	3.14	
060262	SFD 13S7-VV	7/8 ODF	5.75	4.25			
056505	SFD 27S6-VV	3/4 ODF	7.00	5.75			
060251	SFD 27S7-VV	7/8 ODF	7.50	6.00	8.25	3.14	
060252	SFD 27S9-VV	1 1/8 ODF	7.63	5.81			
060253	SFD 54S11-VV	1 3/8 ODF	12.25	10.31			
060254	SFD 54S13-VV	1 5/8 ODF	12.16	9.91			4.5

Standard Product Offering

CSFD Compact Suction Line Filter Drier

The CSFD has a compact solid desiccant core perfect for short lay-in applications. The CSFD is used for moisture, acid and solid contaminant removal. It is for use with CFC, HCFC and HFC refrigerants.

Features

- Dual access valves for easy pressure readings
- High acid removal capacity
- Solid copper fittings for easiest brazing
- Corrosion resistant epoxy powder paint finish

Nomenclature example: CSFD 14S4-VV

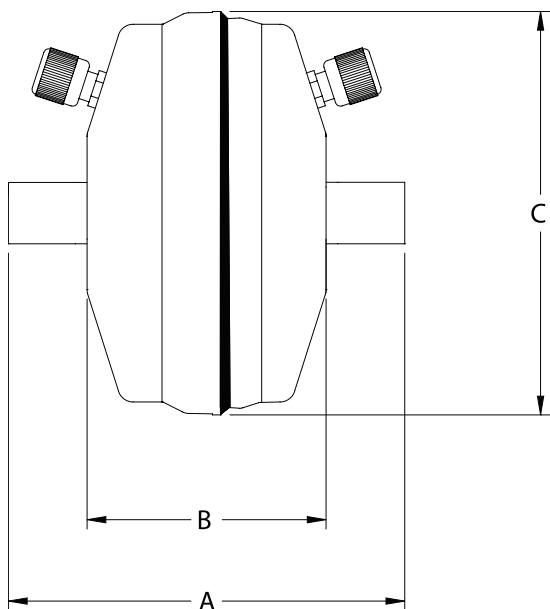
CSFD	14	S	4	VV
Series	Unit Size	Connections S = ODF	Connection Size (in 1/8")	Dual Access Valves



Specifications

- Filtration: 40 microns
- Maximum working pressure: 500 psig
- UL/CUL file number: SA 3124

Dimensional Data



Ordering Information

PCN	Description	Connection Size	Dimensions (in)		
			A	B	C
062231	CSFD-14S4-W	1/2 ODF	4.25	2.75	4.63
062232	CSFD-14S5-W	5/8 ODF	4.50		
062233	CSFD-14S6-W	3/4 ODF	4.38		
062234	CSFD-14S7-W	7/8 ODF	4.56		
062235	CSFD-14S9-W*	1 1/8 ODF	4.88		

* 400 psig Maximum Working Pressure

Standard Product Offering

ASK-HH Suction Line Filter Drier

The ASK utilizes a solid core with an activated carbon blend to maximize acid, moisture and wax removal. It is for use with CFC, HCFC and HFC refrigerants.



Features

- Dual access valves for easy pressure readings
- Corrosion resistant epoxy powder paint finish
- Activated carbon blend for soluble contaminant and wax
- Solid copper connections

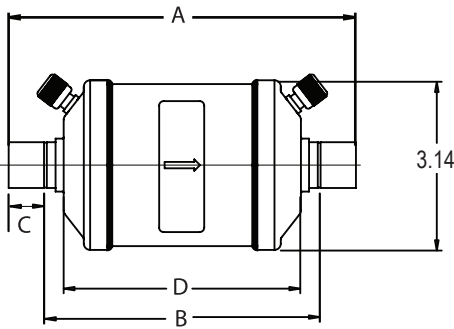
Specifications

- Filtration: 40 microns
- Maximum working pressure: 500 psig
- UL/CUL file number: SA 3124

Nomenclature example: ASK 165S-VV-HH

ASK	16	5	S	VV	HH
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	Connection S = ODF	Dual Access Valves	Charcoal Blend

Dimensional Data



Ordering Information

PCN	Description	Connection Size	Dimensions (in)				Weight (lbs)
			A	B	C	D	
056508	ASK 165S-W-HH	5/8 ODF	6.38	5.13	0.63	4.63	2.00
056509	ASK 166S-W-HH	3/4 ODF	6.75	5.50	0.38		
056510	ASK 167S-W-HH	7/8 ODF	6.94	5.26	0.75	7.50	3.75
056511	ASK 306S-W-HH	3/4 ODF	9.69	8.56	0.63		
056512	ASK 307S-W-HH	7/8 ODF	9.88	8.38	0.75		
056513	ASK 309S-W-HH	1 1/8 ODF	10.19	8.38	0.94		

¹ Dimension does not include weld bead

Standard Product Offering

ASF Suction Line Filter

The ASF is a specifically designed filter to protect the compressor from dirt and all solid contaminants.

Features

- Dual access valves for easy pressure readings
- Solid copper connections
- Corrosion resistant epoxy powder paint finish



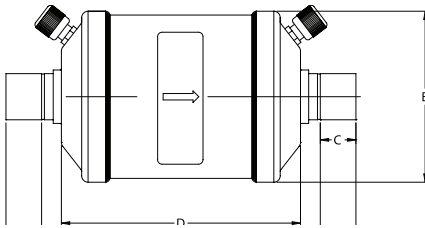
Nomenclature example: ASF 35S5-VV

ASF	35	S	5	VV
Series	Unit Size (in cu. in.)	Connections S = ODF F = SAE	Connection Size (in 1/8")	Dual Access Valves

Specifications

- Filtration: 40 microns
- Maximum working pressure: 500 psig
- UL/CUL file number: SA 3124

Dimensional Data



Ordering Information

PCN	Description	Connection Size	Dimensions					Weight (lbs)
			A	B	C	D	E*	
062961	ASF 11S4	1/2 ODF	4.38	3.38	0.50	2.88	2.63	1.50
062962	ASF 11S5	5/8 ODF	4.63	3.38	0.63	2.88	2.63	1.50
062963	ASF 28S7	7/8 ODF	6.50	5.00	0.75	4.13	3.06	2.00
062964	ASF 28S7-VV	1 1/8 ODF	7.41	5.61	0.91	4.13	3.06	2.00
049177	ASF 28S3-VV	3/8 ODF	5.59	4.72	0.44	4.13	3.69	2.00
049178	ASF 28S4-VV	1/2 ODF	5.69	4.69	0.50	4.13	3.69	2.00
049179	ASF 35F5-VV	5/8 SAE	7.56	-	-	4.75	3.69	2.50
049180	ASF 35S5-VV	5/8 ODF	6.53	5.28	0.63	4.75	3.69	2.50
059999	ASF 45F3-VV	3/8 SAE	7.69	-	-	5.56	3.69	3.00
049181	ASF 45S6-VV	3/4 ODF	7.75	6.50	0.63	5.56	3.69	3.00
049182	ASF 45S7-VV	7/8 ODF	7.94	6.44	0.75	5.56	3.69	3.00
049183	ASF 50S9-VV	1 1/8 ODF	8.84	7.03	0.91	6.13	5.00	3.50
063113	ASF 64S17-V	2 1/8 ODF	11.75	9.06	1.31	7.63	5.00	3.50
063115	ASF 64S21-V	2 5/8 ODF	13.00	10.00	1.50	7.88	5.00	3.50
049184	ASF 75S11-VV	1 3/8 ODF	12.25	10.31	0.97	8.25	5.00	5.00
049185	ASF 75S13-VV	1 5/8 ODF	12.16	9.91	1.13	8.25	5.00	5.00

* Dimension does not include weld bead

Standard Product Offering

Builder Series Filter Drier

The Builder Series filter drier provides an economical system protection for air conditioning applications.

Features

- ODF - Solid copper connections for easy installation
- Solid core construction
- 40 micron filtration
- Maximum working pressure = 680 psig



Nomenclature example: BS-L0835VV

BS	L	08	3	S	VV
Drier Series	L = Liquid S = Suction B = Bi Flow	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF connections (omit for SAE)	VV = Dual areas Valve (Suction Line Only)

Specifications

- Desiccant blend - optimized for high water capacity and acid capacity
- Filtration: 40 microns
- Maximum working pressure: 680 psig
- UL/CUL file number: SA 7175

Ordering Information Liquid Line Service

PCN	Model	Water Capacity drops R-22 @ 125 °F	Flow Capacity Tons *	
			R-22	R-410A
066122	BSL-053S	36	4.9	4.8
066123	BSL-083S	51	4.6	4.5
066098	BSL-084S	51	7.6	7.4
066125	BSL-163S	70	5.3	5.2
066099	BSL-164S	70	9.3	9.1

Suction Line Service

PCN	Model	Water Capacity drops R-22 @ 125 °F	Flow Capacity Tons †	
			R-22	R-410A
066126	BSS-165S	72	3.4	3.5
066127	BSS-166S	72	4.1	4.2
066128	BSS-167S	72	4.1	4.2
066100	BSS-305S	111	3.4	3.5
066101	BSS-306S	111	5.4	5.5
066129	BSS-307S	111	5.9	6.0
066102	BSS-309S	111	6.1	6.2

Bi-Flow Service

PCN	Model	Water Capacity drops R-22 @ 125 °F	Flow Capacity Tons *	
			R-22	R-410A
066130	BSB-083S	154	5.1	5.1
066131	BSB-163S	223	5.2	5.1

*Ratings in accordance with AHRI Standard 710

† Ratings in accordance with AHRI Standard 730

APD Pulsation Dampener/Muffler

The APD series is designed to reduce noise and vibration on the compressor discharge lines.

Features

- Compact size
- Full flow fittings
- Solid copper connections
- Corrosion resistant epoxy powder paint finish
- Rugged steel shells for vibration resistance
- Shock resistant steel shell construction



Specifications

- Maximum working pressure: 680 psig
- Operating Range: -40°F to +250°F
- UL/CUL file number: SA 5760

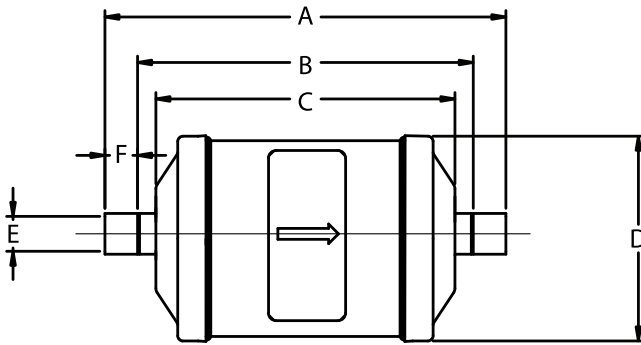
Nomenclature example: APD 053 SB

APD	05	3	S	B
Pulsation Dampener	Cubic Inches	Fitting Size in 1/8"	ODF Fittings	With Baffles (omit for standard)

Flow Capacity

Fitting Size	Tons
3/8	5-10
1/2	10-20
5/8	15-25
7/8	25-35
1 1/8	35+

Dimensional Data



Ordering Information

PCN	Description	Dimensions (in)					
		A	B	C	D	E	F
061862	APD 1R	6.00	5.00	4.47	3.02	0.50	0.50
049651	APD 054 S-B	4.56	3.56	3.00	2.63		
059144	APD 163 S	6.25	5.38	4.75		0.38	0.38
060119	APD 165 S-B	6.56	5.31			0.63	0.63
061042	APD 167 S-B	7.13	5.04	4.77	3.13	0.88	1.04
056989	APD 309 S	10.25	8.44	7.50	3.13	1.13	0.88

Standard Product Offering

HMI Hermetic Moisture Indicators

The HMI is designed to provide an accurate method of determining the moisture content of a system's refrigerant. The HMI has a unique high accuracy moisture indicator for CFC, HCFC, and HFC refrigerants.



Features

- Highest sensitivity moisture indicator available
- Hermetic, leak-free construction
- Single indicator for all common refrigerants
- Accurate color calibration at low ppm levels and higher temperatures
- Wide angle viewing/high visibility window for ease of monitoring
- All brass corrosion resistant body for fewer leaks
- Solid copper connections

Specifications

- Maximum working pressure: 680 psig
- UL/CUL file number: SA 9566

Nomenclature example: HMI 1TT4

HMI	1	TT	4
Hermetic Moisture Indicator	Series	Connection Style TT = Sweat x Sweat	Connection Size (in 1/8")

Ordering Information

PCN	Description	Series	Connection Size
065391	HMI-1MM2	Male Flare x Male Flare	1/4
065392	HMI-1MM3		3/8
065393	HMI-1MM4		1/2
065394	HMI-1MM5		5/8
065395	HMI-1MM6		3/4
065405	HMI-1TT2	Sweat x Sweat (ODF)	1/4
065406	HMI-1TT3		3/8
065407	HMI-1TT4		1/2
065408	HMI-1TT5		5/8
065409	HMI-1TT6		3/4
065410	HMI-1TT7		7/8
065411	HMI-1TT9		1 1/8
065396	HMI-1FM2	Female Flare x Male Flare	1/4
065397	HMI-1FM3		3/8
065398	HMI-1FM4		1/2
065622	HMI-1TT2MF	Sweat x Sweat (ODM x ODF)	1/4
065814	HMI-1TT3MF		3/8
065979	HMI-1TT4MF		1/2
065980	HMI-1TT5MF		5/8

Standard Product Offering

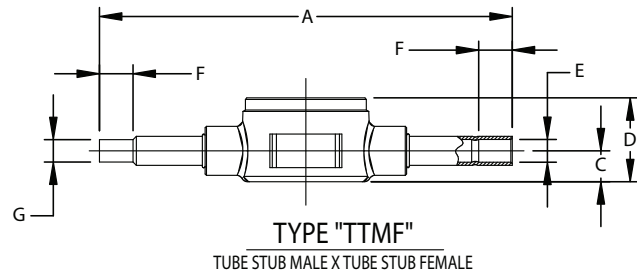
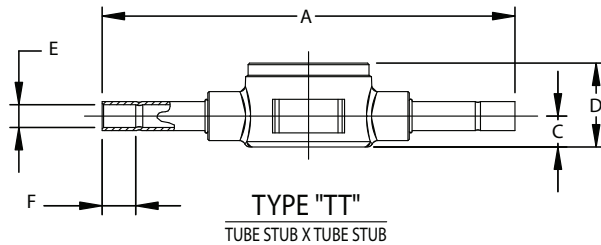
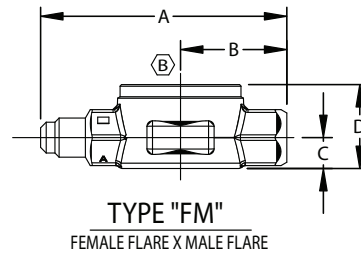
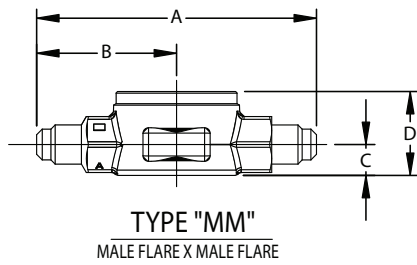
Moisture Content Color Code (ppm H₂O)

Indication Liquid Temperature	Dry (Dark Blue)			Caution (Purple)			Wet (Salmon)		
	75°F	100°F	125°F	75°F	100°F	125°F	75°F	100°F	125°F
R-12	1.4	2.5	4	5	9	15	25	43	70
R-134A	20	35	60	35	55	85	130	160	190
R-22	25	35	50	40	65	90	145	205	290
R-407C	26	40	64	42	68	109	150	230	370
R-410A	30	55	75	50	85	120	165	290	420
R-404A/507	15	25	45	33	50	80	120	150	180

Indication Liquid Temperature	Dry (Dark Blue)				Caution (Purple)				Wet (Salmon)			
	-40°F	-4°F	32°F	68°F	-40°F	-4°F	32°F	68°F	-40°F	-4°F	32°F	68°F
R-744	3	6	11	20	5	10	19	34	16	32	63	116

HMI Hermetic Moisture Indicators

Dimensional Data



Dimensional Data (in)

Type Number	Connection Size	A	B	C	D	E	F Min	G
HMI - 1MM2	1/4 SAE	3.13	1.56	0.34	0.94			
HMI - 1MM3	3/8 SAE	3.38	1.69	0.34	0.94			
HMI - 1MM4	1/2 SAE	3.62	1.81	0.47	1.19			
HMI - 1MM5	5/8 SAE	3.88	1.94	0.47	1.19			
HMI - 1MM6	3/4 SAE	5.00	2.50	0.59	1.53			
HMI - 1FM2	1/4 SAE FM	2.75	1.19	0.34	0.94			
HMI - 1FM3	3/8 SAE FM	3.00	1.31	0.47	1.19			
HMI - 1FM4	1/2 SAE FM	3.22	1.41	0.47	1.19			
HMI - 1TT2	1/4 ODF	5.56		0.34	0.94	0.25	0.38	
HMI - 1TT3	3/8 ODF	5.61		0.34	0.94	0.38	0.40	
HMI - 1TT4	1/2 ODF	5.87		0.47	1.19	0.50	0.50	
HMI - 1TT5	5/8 ODF	5.87		0.61	1.19	0.63	0.63	
HMI - 1TT6	3/4 ODF	6.56		0.61	1.50	0.75	0.63	
HMI - 1TT7	7/8 ODF	6.31		0.61	1.50	0.88	0.75	
HMI - 1TT9	1 1/8 ODF	6.59		0.67	1.37	1.13	0.90	
HMI - 1TT2MF	1/4 ODM x 1/4 ODF	5.56		0.34	0.94	0.25	0.38	0.25
HMI - 1TT3MF	3/8 ODM x 3/8 ODF	5.61		0.34	0.94	0.38	0.38	0.38
HMI - 1TT4MF	1/2 ODM x 1/2 ODF	5.87		0.47	1.19	0.50	0.50	0.50
HMI - 1TT5MF	5/8 ODM x 5/8 ODF	5.87		0.61	1.19	0.63	0.50	0.62

AMI Moisture Indicators

The AMI is designed to provide an accurate method of determining the moisture content of a system's refrigerant. The AMI has a unique high accuracy moisture indicator for CFC, HCFC and HFC refrigerants. For the AMI-2 Series, see the bottom of the following page.



Features

- Highest sensitivity moisture indicator available
- Take-Apart design for easy repair
- Single indicator for all common refrigerants
- Accurate color calibration at low ppm levels and higher temperatures
- Wide angle viewing/high visibility window for ease of monitoring
- Solid copper connections

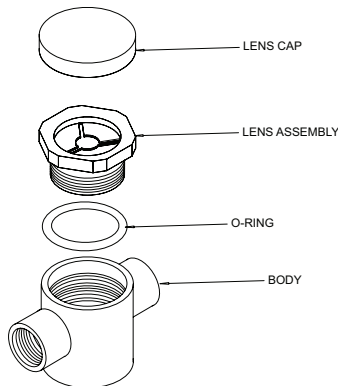
Nomenclature example: AMI 1SS4

AMI	1	SS	4
Moisture Indicator Series	Design Series 1 = standard connection 2 = bushing style	Connection Style TT = Sweat x Sweat	Connection Size (in 1/8")

Replacement Parts For AMI

PCN	Part	Number
021371	Lenscap	12740-1
020877	"O" Ring	PS1525-2
027511	Lens Assembly Kit (Consists of lens assembly, lens cap and "O" ring)	X12978-1

Standard Product Offering



Specifications

- Maximum working pressure: 680 psig
- UL/CUL file number: SA 9566

Ordering Information

PCN	Description	Series	Connection Size
048804	AMI-1MM3	Male Flare x Male Flare	3/8
048805	AMI-1MM4		1/2
048806	AMI-1MM5		5/8
048811	AMI-1SS2	Sweat x Sweat (OD Female)	1/4
048812	AMI-1SS3		3/8
048813	AMI-1SS4		1/2
048814	AMI-1SS5		5/8
048815	AMI-1SS7		7/8
048816	AMI-1SS9		1 1/8
047298	AMI-1TT2 EXTENDED ENDS		1/4
042771	AMI-1TT3 EXTENDED ENDS		3/8
022302	AMI-1TT4 EXTENDED ENDS		1/2
031136	AMI-1TT5 EXTENDED ENDS		5/8
031357	AMI-1TT7 EXTENDED ENDS		7/8
031578	AMI-1TT9 EXTENDED ENDS	1 1/8	
060255	AMI-1TT11 EXTENDED ENDS	1 3/8	
048800	AMI-1FM2	Female Flare x Male Flare	1/4
048801	AMI-1FM3		3/8
048802	AMI-1FM4		1/2

Standard Product Offering

Moisture Content Color Code (ppm H₂O)

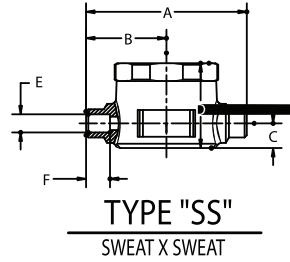
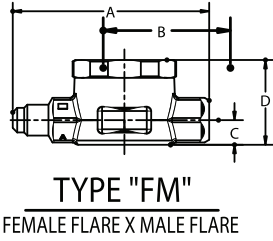
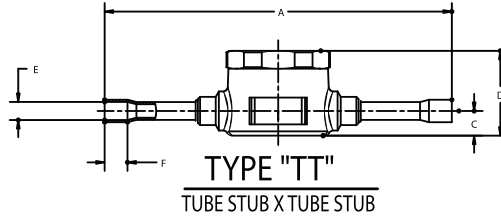
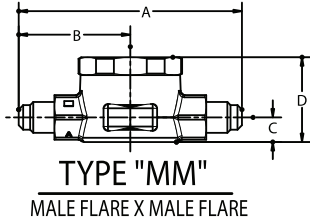
Indication Liquid Temperature	Dry (Dark Blue)			Caution (Purple)			Wet (Salmon)		
	75°F	100°F	125°F	75°F	100°F	125°F	75°F	100°F	125°F
R-12	1.4	2.5	4	5	9	15	25	43	70
R-134A	20	35	60	35	55	85	130	160	190
R-22	25	35	50	40	65	90	145	205	290
R-407C	26	40	64	42	68	109	150	230	370
R-410A	30	55	75	50	85	120	165	290	420
R-404A/507	15	25	45	33	50	80	120	150	180

Indication Liquid Temperature	Dry (Dark Blue)				Caution (Purple)				Wet (Salmon)			
	-40°F	-4°F	32°F	68°F	-40°F	-4°F	32°F	68°F	-40°F	-4°F	32°F	68°F
R-744	3	6	11	20	5	10	19	34	16	32	63	116

AMI Moisture Indicators

AMI-1

Dimensional Data



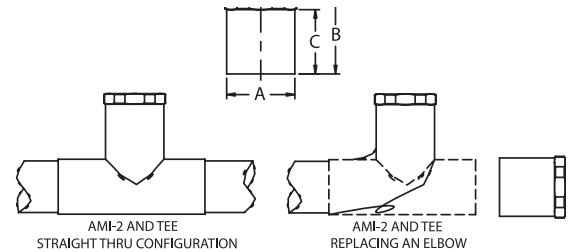
AMI-1 Dimensional Data (in)

Description	Connection Size	A	B	C	D	E	F Min.
AMI-1MM2	1/4 SAE	3.13	1.56	0.34	1.19		
AMI-1MM3	3/8 SAE	3.38	1.69				
AMI-1MM4	1/2 SAE	3.63	1.81	0.47	1.44		
AMI-1MM5	5/8 SAE	3.88	1.94				
AMI-1FM2	1/4 SAE	2.75	1.19	0.34	1.19		
AMI-1FM3	3/8 SAE	3.00	1.31				
AMI-1FM4	1/2 SAE	3.22	1.41	0.47	1.44		
AMI-1SS2	1/4 ODF	2.25	1.13				
AMI-1SS3	3/8 ODF			0.38	.32		
AMI-1SS4	1/2 ODF	2.63	1.31	0.47	1.44	0.50	.38
AMI-1SS5	5/8 ODF					0.63	.50
AMI-1SS7	7/8 ODF	3.13	1.56	0.61	1.75	0.88	.76
AMI-1SS9	1 1/8 ODF	3.38	1.69	0.67	1.92	1.13	.90
AMI-1TT2	1/4 ODF	4.89		0.34	1.19	.25	.32
AMI-1TT3	3/8 ODF					0.38	.32
AMI-1TT4	1/2 ODF	4.92		0.47	1.44	0.50	.38
AMI-1TT5	5/8 ODF					0.63	.50
AMI-1TT7	7/8 ODF	6.36		0.61	1.75	0.88	.76
AMI-1TT9	1 1/8 ODF	6.59		0.67	1.92	1.125	.90
AMI-1TT11	1 3/8 ODF	6.94		1.00	2.39	1.38	1.3

AMI-2 Series Dimensions (in)

PCN	Description	Connection Size	A Dia.	B	C
064167	AMI-2S7	7/8 ODM	0.88	1.34	1.00
064168	AMI-2S9	1 1/8 ODM	1.13	1.25	1.00
022303	AMI-2S11	1 3/8 ODM	1.38	1.56	1.94
028388	AMI-2S13	1 5/8 ODM	1.63	1.69	1.44
031219	AMI-2S17	2 1/8 ODM	2.13	1.94	1.69

Standard Product Offering



A-IHL Moisture Indicators

The A-IHL saddle design moisture indicator is used for large diameter tubing in CFC, HCFC and HFC refrigerants.

Features

- Saddle design
- Solid copper connections
- Replaceable moisture indicator
- Eliminates the need for bypass installation - positive reaction to system moisture levels

Specifications

- Maximum working pressure: 680 psig
- UL/CUL file number: SA 9566

Nomenclature example: A-IHL 9S

A-IHL	9	S
Series	Connection Size (in 1/8")	S = ODF



Ordering Information

PCN	Model	Connection Size	Overall Length (in)
060853	A-IHL-9S	1 1/8 ODF	6.31
061030	A-IHL-11S	1 3/8 ODF	7.12
061031	A-IHL-13S	1 5/8 ODF	7.87
061032	A-IHL-17S	2 1/8 ODF	8.68

Standard Product Offering

Thermal Expansion Valves

TXV Extended Capacity Tables

EX Valves and Controls

EX Extended Capacity Tables

Solenoid Valves and Coils

Solenoid Capacity Tables

Industrial Solenoid Valves

Shut Off Valves

System Protectors

System Protectors Capacity Tables

Oil Controls

Temperature Pressure Controls

A-AS Suction Accumulators

The A-AS protects the compressor from liquid slugging and is used with CFC, HCFC, and HFC refrigerants. It is available for systems through 28 tons nominal capacity.

Features

- Designed to operate in a range of +40°F to -40°F evaporator temperature
- Fusible plug on larger diameter units
- Solid copper connections
- Corrosion resistant epoxy powder paint finish
- Inlet deflector directs refrigerant flow to prevent internal splashing and aid in the collection of refrigerant oil



Nomenclature example: A-AS 3 125

A	AS	3	12	5
Series	Accumulator Suction	Diameter (in)	Height (in)	Fitting Size in 1/8"

Specifications

- Maximum working pressure: 300 psig
- Fusible plug temperature: 430°F
- UL/CUL file number: SA 10225

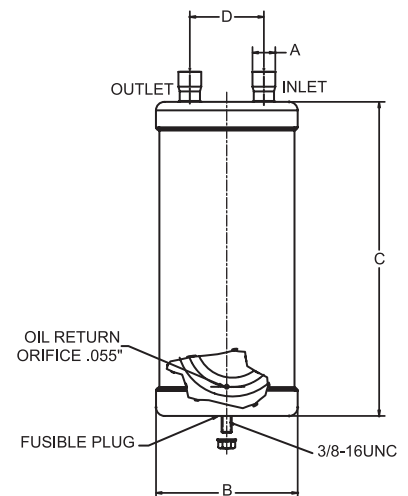
Ordering Information and Dimensional Data (in)

PCN	Description	A Fitting Size (nominal)	B Diameter	C Height	D Fitting Separation	Weight (lbs)	Tons R-22 (+40°F)	Holding Capacity (lbs) 50% of System Charge	
								40°F Liquid R-22/R-134a	40°F Liquid R-404A/R-507
060819	A-AS 3 84*	1/2	3.00	8.00	1.63	2.00	2.00	1.50	1.50
060963	A-AS 3 105*	5/8	3.00	10.00	1.63	2.40	3.00	2.00	2.00
060812	A-AS 3 125*	5/8	3.00	12.00	1.63	2.90	3.00	3.00	2.50
060813	A-AS 3 126*	3/4	3.00	12.00	1.63	2.90	4.00	3.00	2.50
060964	A-AS 3 145*	5/8	3.00	15.00	1.63	3.30	3.00	3.50	3.00
060965	A-AS 3 146*	3/4	3.00	14.00	1.63	3.30	4.00	3.50	2.75
060967	A-AS 4 64	1/2	4.00	6.00	2.50	2.80	2.00	2.50	2.00
060821	A-AS 4 65	5/8	4.00	6.00	2.50	2.80	3.00	2.50	2.00
060966	A-AS 4 105	5/8	4.00	10.00	2.50	4.60	3.00	4.00	3.50
060820	A-AS 4 106	3/4	4.00	10.00	2.50	4.60	4.00	4.00	3.50
060824	A-AS 5 96	3/4	5.00	9.00	2.75	5.10	4.00	6.00	5.50
060818	A-AS 5 97	7/8	5.00	9.00	2.75	5.10	7.30	6.00	5.50
060822	A-AS 5 126	3/4	5.00	12.00	2.75	6.60	4.00	8.00	7.50
060823	A-AS 5 127	7/8	5.00	12.00	2.75	6.60	7.30	8.00	7.50
060814	A-AS 5 137	7/8	5.00	13.00	2.75	7.10	7.30	8.50	8.00
060815	A-AS 5 139	1-1/8	5.00	13.00	2.75	7.10	11.80	8.50	8.00
060817	A-AS 5 179	1-1/8	5.00	17.00	2.75	8.40	11.80	12.00	10.00
060816	A-AS 5 1711	1-3/8	5.00	17.00	2.75	8.40	18.80	12.00	10.00
060825	A-AS 6 117	7/8	6.00	11.00	2.94	10.00	7.30	10.00	9.00
060826	A-AS 6 137	7/8	6.00	13.00	2.94	11.70	7.30	12.84	11.49
060968	A-AS 6 139	1-1/8	6.00	13.00	2.94	11.70	11.80	12.84	11.49
060827	A-AS 6 1411	1-3/8	6.00	14.00	2.94	12.10	18.80	14.05	12.57
060969	A-AS 6 1713	1-5/8	6.00	17.00	2.94	15.40	28.50	17.32	15.49
060828	A-AS 6 2013	1-5/8	6.00	20.00	2.94	18.10	28.50	20.62	18.44
060970	A-AS 6 2513	1-5/8	6.00	25.00	2.94	22.60	28.50	25.81	23.08

*Not supplied with a fusible plug

Standard Product Offering

Dimensional Data



ACC Charge Compensator

The ACC is a charge compensator that is designed to work in heat pump applications. It increases system efficiency by storing extra refrigerant in the heating mode. It then returns refrigerant back into circulation in the cooling mode.



Features

- Solid copper connection
- Corrosion resistant epoxy powder paint finish

Nomenclature example: ACC-3637S

ACC	36	3	7	S
Series	Internal Volume (cu. in.)	Diameter (in.)	Connection Size (in. 1/8")	ODF

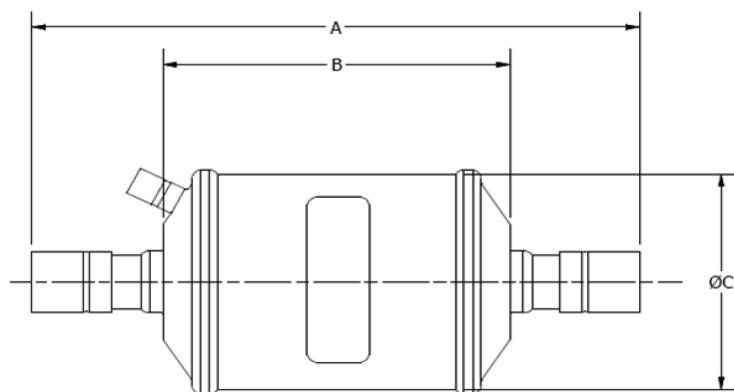
Specifications

- Maximum working pressure: 680 psig
- UL/CUL file number: SA5760

Ordering Information

PCN	Description	Internal Volume (cu. in.)	Liquid Line Connection	Connection	Dimensions (in.)			Holding Capacity (oz.)	
					A	B	C	R-410A	
								75°F	125°F
066631	ACC-2336S	23	3/8 ODF	3/4 ODF	7.19	3.33	3.50	15	13
066632	ACC-3636S	36	3/8 ODF	3/4 ODF	8.94	5.08	3.50	24	20
066633	ACC-3637S		3/8 ODF	7/8 ODF	8.94	5.08	3.50	24	20
066634	ACC-4736S	47	3/8 ODF	3/4 ODF	10.18	6.32	3.50	31	26
066635	ACC-4737S		3/8 ODF	7/8 ODF	10.18	6.32	3.50	30	25
066493	ACC-6236S	62	3/8 ODF	3/4 ODF	12.06	8.20	3.50	40	34
066636	ACC-6237S		3/8 ODF	7/8 ODF	12.06	8.20	3.50	40	33
066637	ACC-7837S	78	3/8 ODF	7/8 ODF	14.11	10.25	3.50	51	43
066638	ACC-7836S		3/8 ODF	3/4 ODF	14.11	10.25	3.50	50	42
066639	ACC-9536S	95	3/8 ODF	3/4 ODF	15.86	12.00	3.50	60	51
066640	ACC-9537S		3/8 ODF	7/8 ODF	15.86	12.00	3.50	59	50

Dimensional Data



Hermetic Suction Line Filter Drier Flow Capacities

Description	Connections	Flow Capacity In Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²											
		R-12				R-134a/R-450A/R-513A				R-744			
		Evaporator Temperature (°F)											
		40	20	0	-20	40	20	0	-20	20	0	-20	-40
		Pressure Drop (PSI)											
2	1.5	1	0.5	2	1.5	1	0.5	6	5	4	3		
ASD 28S3-VV	3/8 ODF	1.1	0.6	0.5	0.5	1.1	0.6	0.5	0.4	7.2	6.3	6.8	8.5
ASD 28S4-VV	1/2 ODF	1.8	1.2	0.8	0.7	1.9	1.2	0.8	0.6	11.8	10.2	10.6	14.2
ASD 35F5-VV	5/8 SAE	2.1	1.4	1.1	0.9	2.2	1.4	1.0	0.8	13.7	12.2	12.9	17.0
ASD 35S5-VV	5/8 ODF	2.8	1.9	1.4	1.1	2.9	1.9	1.3	1.0	18.1	15.6	16.7	22.7
ASD 45S6-VV	3/4 ODF	3.8	2.5	1.8	1.2	3.9	2.5	1.7	1.1	21.8	22.4	24.2	28.4
ASD 45S7-VV	7/8 ODF	5.0	3.6	2.3	1.5	5.1	3.5	2.2	1.3	28.7	29.2	31.1	36.9
ASD 50S9-VV	1-1/8 ODF	7.1	5.0	3.2	1.8	7.3	4.9	3.0	1.6	41.1	41.3	43.2	49.6
ASD 75S11-VV	1-3/8 ODF	8.6	5.9	3.7	2.0	8.8	5.8	3.5	1.8	50.5	49.6	50.8	56.7
ASD 75S13-VV	1-5/8 ODF	9.0	6.2	3.9	2.1	9.3	6.1	3.7	1.9	53.9	52.0	53.0	59.6
ASF 28S3-VV	3/8 ODF	1.2	0.8	0.5	0.5	1.2	0.8	0.5	0.4	7.5	6.3	6.8	9.9
ASF 28S4-VV	1/2 ODF	1.9	1.3	0.9	0.8	2.0	1.3	0.9	0.7	12.8	11.2	12.1	17.0
ASF 35F5-VV	5/8 SAE	2.2	1.5	1.1	0.9	2.3	1.5	1.0	0.8	14.6	12.6	13.6	18.4
ASF 35S5-VV	5/8 ODF	3.2	2.2	1.6	1.4	3.3	2.2	1.5	1.2	20.6	18.0	19.7	26.9
ASF 45S6-VV	3/4 ODF	4.7	3.2	2.3	1.8	4.8	3.1	2.2	1.6	30.5	26.7	28.0	38.3
ASF 45S7-VV	7/8 ODF	6.5	4.8	3.3	1.9	6.7	4.7	3.1	1.7	37.4	38.9	42.4	51.0
ASF 50S9-VV	1-1/8 ODF	9.2	6.8	4.5	2.6	9.5	6.7	4.3	2.3	59.2	58.3	62.1	69.5
ASF 64S17-VV	2-1/8 ODF	25.3	18.3	12.6	7.2	26.0	18	12	6.4	127.8	131.2	144.0	170.2
ASF 75S11-VV	1-3/8 ODF	11.7	8.8	5.9	3.4	12.0	8.7	5.6	3.0	49.9	72.9	83.4	95.0
ASF 75S13-VV	1-5/8 ODF	13.6	9.7	6.6	3.8	14.0	9.5	6.3	3.4	74.8	72.9	75.8	92.2
ASK 165S-VV-HH	5/8 ODF	1.9	1.4	0.8	0.6	2.0	1.4	0.8	0.5	10.6	10.2	10.6	12.8
ASK 166S-VV-HH	3/4 ODF	2.4	1.7	1.1	0.7	2.5	1.7	1.0	0.6	13.1	12.6	12.9	14.2
ASK 167S-VV-HH	7/8 ODF	2.6	1.8	1.2	0.7	2.7	1.8	1.1	0.6	14.3	13.6	14.4	15.6
ASK 306S-VV-HH	3/4 ODF	3.3	2.3	1.5	0.9	3.4	2.3	1.4	0.8	17.1	17.0	17.4	19.9
ASK 307S-VV-HH	7/8 ODF	3.5	2.5	1.6	0.9	3.6	2.5	1.5	0.8	19.0	18.5	18.9	21.3
ASK 309S-VV-HH	1-1/8 ODF	3.8	2.6	1.7	0.9	3.9	2.6	1.6	0.8	20.3	19.4	19.7	22.7
CSFD 14S4-VV	1/2 ODF	1.3	0.9	0.5	0.3	1.3	0.9	0.5	0.3	6.2	6.3	6.8	8.5
CSFD 14S5-VV	5/8 ODF	2.2	1.5	0.9	0.6	2.3	1.5	0.9	0.5	11.2	11.7	12.1	14.2
CSFD 14S6-VV	3/4 ODF	3.0	2.1	1.3	0.8	3.1	2.1	1.3	0.7	15.3	15.6	16.7	19.9
CSFD 14S7-VV	7/8 ODF	3.2	2.2	1.5	0.8	3.3	2.2	1.4	0.7	16.2	16.5	17.4	21.3
CSFD 14S9-VV	1-1/8 ODF	4.4	3.1	1.9	1.1	4.5	3.0	1.8	1.0	21.8	22.4	23.5	28.4
SFD 13F3-VV	3/8 SAE	0.7	0.4	0.2	0.1	0.7	0.4	0.2	0.1	4.4	3.9	3.0	2.8
SFD 13S3-VV	3/8 ODF	1.3	0.8	0.5	0.2	1.3	0.8	0.5	0.2	6.9	6.3	6.1	7.1
SFD 13F4-VV	1/2 SAE	1.5	1.0	0.6	0.3	1.5	1.0	0.6	0.3	7.5	7.8	8.3	9.9
SFD 13S4-VV	1/2 ODF	2.2	1.5	1.1	0.6	2.3	1.5	1.0	0.5	10.9	11.2	12.1	14.2
SFD 13F5-VV	5/8 SAE	2.4	1.7	1.2	0.7	2.5	1.7	1.1	0.6	11.5	11.7	12.1	14.2
SFD 13S5-VV	5/8 ODF	3.0	2.1	1.4	0.8	3.1	2.1	1.3	0.7	15.3	15.6	16.7	19.9
SFD 13S6-VV	3/4 ODF	4.0	2.7	1.8	1.0	4.1	2.7	1.7	0.9	19.9	20.4	21.2	25.5
SFD 13S7-VV	7/8 ODF	4.3	3.1	2.0	1.1	4.4	3.0	1.9	1.0	22.4	22.4	22.7	26.9
SFD 27S6-VV	3/4 ODF	4.0	2.7	1.8	1.0	4.1	2.7	1.7	0.9	19.9	20.4	21.2	25.5
SFD 27S7-VV	7/8 ODF	4.6	3.2	2.0	1.1	4.7	3.1	1.9	1.0	23.4	23.3	24.2	28.4
SFD 27S9-VV	1-1/8 ODF	5.1	3.5	2.1	1.1	5.2	3.4	2.0	1.0	26.5	26.2	26.5	29.8
SFD 54S11-VV	1-3/8 ODF	4.4	2.9	1.8	1.0	4.5	2.9	1.7	0.9	22.8	22.4	22.7	25.5
SFD 54S13-VV	1-5/8 ODF	4.5	3.1	1.9	1.0	4.6	3.0	1.8	0.9	23.1	22.8	24.2	28.4

¹ All ratings in accordance with ARI Standard 730-04.

² Example: 1.0 tons x 3.5 = 3.5 kW

Thermal Expansion Valves
TXV Extended Capacity Tables
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System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

Hermetic Suction Line Filter Drier Flow Capacities

Description	Connections	Flow Capacity In Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²														
		R-22 / R-448A / R-449A					R-407C					R-410A				
		Evaporator Temperature (°F)														
		40	20	0	-20	-40	40	20	0	-20	-40	40	20	0	-20	-40
		Pressure Drop (PSI)														
3	2	1.5	1	0.5	3	2	1.5	1	0.5	3	2	1.5	1	0.5		
ASD 28S3-VV	3/8 ODF	2.3	1.3	0.9	0.6	0.5	2.1	1.2	0.8	0.5	0.4	2.8	1.6	1.1	0.7	0.6
ASD 28S4-VV	1/2 ODF	3.8	2.1	1.4	1.0	0.8	3.5	1.9	1.2	0.9	0.7	4.6	2.6	1.7	1.2	1.0
ASD 35F5-VV	5/8 SAE	4.4	2.5	1.7	1.2	0.9	4.1	2.3	1.5	1.0	0.7	5.3	3.0	2.1	1.5	1.1
ASD 35S5-VV	5/8 ODF	5.8	3.2	2.2	1.6	1.0	5.4	2.9	1.9	1.4	0.8	7.0	3.9	2.7	2.0	1.3
ASD 45S6-VV	3/4 ODF	7.0	4.6	3.2	2.0	1.1	6.5	4.2	2.8	1.7	0.9	8.5	5.6	3.9	2.5	1.4
ASD 45S7-VV	7/8 ODF	9.2	6.0	4.1	2.6	1.4	8.5	5.5	3.6	2.3	1.2	11.2	7.3	5.0	3.2	1.8
ASD 50S9-VV	1-1/8 ODF	13.2	8.5	5.7	3.5	1.8	12.2	7.7	5.0	3.1	1.5	16.0	10.3	7.0	4.3	2.3
ASD 75S11-VV	1-3/8 ODF	16.2	10.2	6.7	4.0	2.0	15.0	9.3	5.9	3.5	1.7	19.6	12.4	8.2	5.0	2.5
ASD 75S13-VV	1-5/8 ODF	17.3	10.7	7.0	4.2	2.1	16.0	9.7	6.2	3.7	1.7	21.0	13.0	8.6	5.2	2.6
ASF 28S3-VV	3/8 ODF	2.4	1.3	0.9	0.7	0.5	2.2	1.2	0.8	0.6	0.4	2.9	1.6	1.1	0.9	0.6
ASF 28S4-VV	1/2 ODF	4.1	2.3	1.6	1.2	0.9	3.8	2.1	1.4	1.0	0.7	5.0	2.8	2.0	1.5	1.1
ASF 35F5-VV	5/8 SAE	4.7	2.6	1.8	1.3	1.0	4.4	2.4	1.6	1.1	0.8	5.7	3.2	2.2	1.6	1.3
ASF 35S5-VV	5/8 ODF	6.6	3.7	2.6	1.9	1.6	6.1	3.4	2.3	1.7	1.3	8.0	4.5	3.2	2.4	2.0
ASF 45S6-VV	3/4 ODF	9.8	5.5	3.7	2.7	2.2	9.1	5.0	3.3	2.4	1.8	11.9	6.7	4.5	3.4	2.8
ASF 45S7-VV	7/8 ODF	12.0	8.0	5.6	3.6	3.0	11.1	7.3	5.0	3.1	2.5	14.6	9.7	6.9	4.5	3.8
ASF 50S9-VV	1-1/8 ODF	19.0	12.0	8.2	4.9	2.6	17.6	10.9	7.3	4.3	2.2	23.0	14.6	10.1	6.1	3.3
ASF 64S17-VV	2-1/8 ODF	41.0	27.0	19.0	12.0	6.9	38.0	24.5	16.8	10.5	5.7	49.7	32.8	23.3	14.9	8.6
ASF 75S11-VV	1-3/8 ODF	16.0	15.0	11.0	6.7	3.3	14.8	13.6	9.7	5.8	2.7	19.4	18.2	13.5	8.3	4.1
ASF 75S13-VV	1-5/8 ODF	24.0	15.0	10.0	6.5	3.2	22.2	13.6	8.9	5.7	2.7	29.1	18.2	12.3	8.1	4.0
ASK 165S-VV-HH	5/8 ODF	3.4	2.1	1.4	0.9	0.4	3.2	1.9	1.2	0.8	0.3	4.1	2.6	1.7	1.1	0.5
ASK 166S-VV-HH	3/4 ODF	4.2	2.6	1.7	1.0	0.5	3.9	2.4	1.5	0.9	0.4	5.1	3.2	2.1	1.2	0.6
ASK 167S-VV-HH	7/8 ODF	4.6	2.8	1.9	1.1	0.6	4.3	2.5	1.7	1.0	0.5	5.6	3.4	2.3	1.4	0.8
ASK 306S-VV-HH	3/4 ODF	5.5	3.5	2.3	1.4	0.8	5.1	3.2	2.0	1.2	0.7	6.7	4.3	2.8	1.7	1.0
ASK 307S-VV-HH	7/8 ODF	6.1	3.8	2.5	1.5	0.8	5.7	3.5	2.2	1.3	0.7	7.4	4.6	3.1	1.9	1.0
ASK 309S-VV-HH	1-1/8 ODF	6.5	4.0	2.6	1.6	0.8	6.0	3.6	2.3	1.4	0.7	7.9	4.9	3.2	2.0	1.0
CSFD 14S4-VV	1/2 ODF	2.0	1.3	0.9	0.6	0.3	1.9	1.2	0.8	0.5	0.2	2.4	1.6	1.1	0.7	0.4
CSFD 14S5-VV	5/8 ODF	3.6	2.4	1.6	1.0	0.5	3.3	2.2	1.4	0.9	0.4	4.4	2.9	2.0	1.2	0.6
CSFD 14S6-VV	3/4 ODF	4.9	3.2	2.2	1.4	0.7	4.5	2.9	1.9	1.2	0.6	5.9	3.9	2.7	1.7	0.9
CSFD 14S7-VV	7/8 ODF	5.2	3.4	2.3	1.5	0.8	4.8	3.1	2.0	1.3	0.7	6.3	4.1	2.8	1.9	1.0
CSFD 14S9-VV	1-1/8 ODF	7.0	4.6	3.1	2.0	1.0	6.5	4.2	2.7	1.7	0.8	8.5	5.6	3.8	2.5	1.3
SFD 13F3-VV	3/8 SAE	1.4	0.8	0.4	0.2	0.1	1.3	0.7	0.4	0.2	0.1	1.7	1.0	0.5	0.2	0.1
SFD 13S3-VV	3/8 ODF	2.2	1.3	0.8	0.5	0.2	2.0	1.2	0.7	0.4	0.2	2.7	1.6	1.0	0.6	0.3
SFD 13F4-VV	1/2 SAE	2.4	1.6	1.1	0.7	0.4	2.2	1.5	1.0	0.6	0.3	2.9	1.9	1.3	0.9	0.5
SFD 13S4-VV	1/2 ODF	3.5	2.3	1.6	1.0	0.6	3.2	2.1	1.4	0.9	0.5	4.2	2.8	2.0	1.2	0.8
SFD 13F5-VV	5/8 SAE	3.7	2.4	1.6	1.0	0.6	3.4	2.2	1.4	0.9	0.5	4.5	2.9	2.0	1.2	0.8
SFD 13S5-VV	5/8 ODF	4.9	3.2	2.2	1.4	0.8	4.5	2.9	1.9	1.2	0.7	5.9	3.9	2.7	1.7	1.0
SFD 13S6-VV	3/4 ODF	6.4	4.2	2.8	1.8	1.0	5.9	3.8	2.5	1.6	0.8	7.8	5.1	3.4	2.2	1.3
SFD 13S7-VV	7/8 ODF	7.2	4.6	3.0	1.9	1.0	6.7	4.2	2.7	1.7	0.8	8.7	5.6	3.7	2.4	1.3
SFD 27S6-VV	3/4 ODF	6.4	4.2	2.8	1.8	1.0	5.9	3.8	2.5	1.6	0.8	7.8	5.1	3.4	2.2	1.3
SFD 27S7-VV	7/8 ODF	7.5	4.8	3.2	2.0	1.1	7.0	4.4	2.8	1.7	0.9	9.1	5.8	3.9	2.5	1.4
SFD 27S9-VV	1-1/8 ODF	8.5	5.4	3.5	2.1	1.1	7.9	4.9	3.1	1.8	0.9	10.3	6.6	4.3	2.6	1.4
SFD 54S11-VV	1-3/8 ODF	7.3	4.6	3.0	1.8	1.0	6.8	4.2	2.7	1.6	0.8	8.9	5.6	3.7	2.2	1.3
SFD 54S13-VV	1-5/8 ODF	7.4	4.7	3.2	2.0	1.0	6.9	4.3	2.8	1.7	0.8	9.0	5.7	3.9	2.5	1.3

¹ All ratings in accordance with ARI Standard 730-04.

² Example: 1.0 tons x 3.5 = 3.5 kW

Hermetic Suction Line Filter Drier Flow Capacities

Description	Connections	Flow Capacity In Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²									
		R-502					R-404A/R-507				
		Evaporator Temperature (°F)									
		40	20	0	-20	40	20	0	-20	-40	
		Pressure Drop (PSI)									
3	2	1.5	1	3	2	1.5	1	0.5			
ASD 28S3-VV	3/8 ODF	2.2	1.1	0.7	0.5	2.1	1.1	0.7	0.5	0.3	
ASD 28S4-VV	1/2 ODF	3.7	1.8	1.1	0.7	3.6	1.8	1.1	0.7	0.5	
ASD 35F5-VV	5/8 SAE	4.2	2.1	1.3	0.9	4.1	2.1	1.3	0.9	0.6	
ASD 35S5-VV	5/8 ODF	5.6	2.8	1.7	1.1	5.4	2.8	1.7	1.1	0.8	
ASD 45S6-VV	3/4 ODF	6.6	3.7	2.5	1.5	6.4	3.7	2.5	1.6	1.0	
ASD 45S7-VV	7/8 ODF	7.7	4.8	3.3	1.9	7.5	4.8	3.3	2.0	1.1	
ASD 50S9-VV	1-1/8 ODF	11.0	6.9	4.6	2.7	11.0	6.9	4.6	2.8	1.4	
ASD 75S11-VV	1-3/8 ODF	14.0	8.4	5.4	3.1	14.0	8.4	5.4	3.2	1.6	
ASD 75S13-VV	1-5/8 ODF	15.0	8.9	5.7	3.3	15.0	8.9	5.7	3.4	1.7	
ASF 28S3-VV	3/8 ODF	2.3	1.1	0.7	0.5	2.2	1.1	0.7	0.5	0.3	
ASF 28S4-VV	1/2 ODF	3.9	2.0	1.2	0.8	3.8	2.0	1.2	0.8	0.6	
ASF 35F5-VV	5/8 SAE	4.5	2.3	1.4	0.9	4.4	2.3	1.4	0.9	0.7	
ASF 35S5-VV	5/8 ODF	6.3	3.2	2.0	1.4	6.1	3.2	2.0	1.4	1.0	
ASF 45S6-VV	3/4 ODF	9.4	4.7	2.9	1.8	9.1	4.7	2.9	1.9	1.4	
ASF 45S7-VV	7/8 ODF	10.0	6.3	4.5	2.7	9.8	6.3	4.5	2.8	1.5	
ASF 50S9-VV	1-1/8 ODF	16.0	10.0	6.6	3.9	16.0	10.0	6.7	4.0	2.0	
ASF 64S17-VV	2-1/8 ODF	36.0	23.0	15.0	9.5	35.0	23.0	15.0	9.8	5.2	
ASF 75S11-VV	1-3/8 ODF	21.0	13.0	8.2	4.9	20.0	13.0	8.3	5.1	2.6	
ASF 75S13-VV	1-5/8 ODF	22.0	13.0	8.3	5.0	21.0	13.0	8.4	5.2	2.7	
ASK 165S-VV-HH	5/8 ODF	3.3	1.9	1.2	0.8	3.2	1.9	1.2	0.8	0.3	
ASK 166S-VV-HH	3/4 ODF	4.0	2.4	1.6	0.9	3.9	2.4	1.6	0.9	0.5	
ASK 167S-VV-HH	7/8 ODF	4.4	2.6	1.7	1.0	4.3	2.6	1.7	1.0	0.6	
ASK 306S-VV-HH	3/4 ODF	5.2	3.2	2.2	1.2	5.0	3.2	2.2	1.2	0.7	
ASK 307S-VV-HH	7/8 ODF	5.8	3.5	2.3	1.4	5.6	3.5	2.3	1.4	0.7	
ASK 309S-VV-HH	1-1/8 ODF	6.2	3.7	2.4	1.4	6.0	3.7	2.4	1.5	0.7	
CSFD 14S4-VV	1/2 ODF	1.3	0.8	0.5	0.3	1.3	0.8	0.5	0.3	0.2	
CSFD 14S5-VV	5/8 ODF	2.7	1.7	1.1	0.7	2.6	1.7	1.1	0.7	0.3	
CSFD 14S6-VV	3/4 ODF	3.7	2.3	1.5	0.9	3.6	2.3	1.5	0.9	0.5	
CSFD 14S7-VV	7/8 ODF	4.0	2.4	1.6	1.0	3.9	2.4	1.6	1.0	0.5	
CSFD 14S9-VV	1-1/8 ODF	5.1	3.1	2.0	1.3	4.9	3.1	2.0	1.3	0.7	
SFD 13F3-VV	3/8 SAE	1.3	0.7	0.4	0.2	1.3	0.7	0.4	0.2	0.1	
SFD 13S3-VV	3/8 ODF	2.0	1.1	0.7	0.4	1.9	1.1	0.7	0.4	0.2	
SFD 13F4-VV	1/2 SAE	2.2	1.3	0.9	0.5	2.1	1.3	0.9	0.5	0.3	
SFD 13S4-VV	1/2 ODF	3.1	1.9	1.3	0.8	3.0	1.9	1.3	0.8	0.4	
SFD 13F5-VV	5/8 SAE	3.3	2.0	1.4	0.9	3.2	2.0	1.4	0.9	0.5	
SFD 13S5-VV	5/8 ODF	4.3	2.7	1.8	1.1	4.2	2.7	1.8	1.1	0.6	
SFD 13S6-VV	3/4 ODF	5.8	3.5	2.3	1.4	5.6	3.5	2.3	1.4	0.7	
SFD 13S7-VV	7/8 ODF	6.5	3.9	2.6	1.4	6.3	3.9	2.6	1.5	0.8	
SFD 27S6-VV	3/4 ODF	5.8	3.5	2.3	1.4	5.6	3.5	2.3	1.4	0.7	
SFD 27S7-VV	7/8 ODF	6.7	4.1	2.7	1.5	6.5	4.1	2.7	1.6	0.8	
SFD 27S9-VV	1-1/8 ODF	7.7	4.6	3.0	1.6	7.5	4.6	3.0	1.7	0.9	
SFD 54S11-VV	1-3/8 ODF	6.6	3.9	2.5	1.4	6.4	3.9	2.5	1.5	0.7	
SFD 54S13-VV	1-5/8 ODF	6.7	4.0	2.6	1.5	6.5	4.0	2.6	1.6	0.8	

¹ All ratings in accordance with ARI Standard 730-04.

² Example: 1.0 tons x 3.5 = 3.5 kW

Take-Apart Suction Line Filter Drier Flow Capacities

Description	Connections	Filter Drier Cartridge	Flow Capacity In Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²							
			R-12				R-134a / R-450A / R-513A			
			Evaporator Temperature (°F)							
			40	20	0	-20	40	20	0	-20
			Pressure Drop (PSI)							
2	1.5	1	0.5	2	1.5	1	0.5			
ADKS 30013T	1-5/8 ODF	(3) F-100 Filter	24.0	17.0	12.0	7.0	25.0	17.0	11.0	6.2
ADKS 30017T	2-1/8 ODF	(3) F-100 Filter	42.0	31.0	20.0	12.0	43.0	30.0	19.0	11.0
ADKS 40017T	2-1/8 ODF	(4) F-100 Filter	44.0	32.0	21.0	12.0	45.0	31.0	20.0	11.0
ADKS 40021T	2-5/8 ODF	(4) F-100 Filter	66.0	48.0	32.0	19.0	68.0	47.0	30.0	17.0
ADKS 30013T	1-5/8 ODF	(3) 100 cu in Core	19.0	14.0	9.1	5.5	20.0	14.0	8.7	4.9
ADKS 30017T	2-1/8 ODF	(3) 100 cu in Core	30.0	22.0	15.0	8.7	31.0	22.0	14.0	7.7
ADKS 40017T	2-1/8 ODF	(4) 100 cu in Core	33.0	23.0	16.0	9.5	34.0	23.0	15.0	8.4
ADKS 40021T	2-5/8 ODF	(4) 100 cu in Core	48.0	35.0	23.0	14.0	49.0	34.0	22.0	12.0
BTAS-27 S-V	7/8 ODF	A2F Filter	4.7	3.4	2.2	1.2	4.8	3.3	2.1	1.1
BTAS-39 S-V	1-1/8 ODF	A3F Filter	7.1	5.1	3.4	1.9	7.3	5.0	3.2	1.7
BTAS-311 S-V	1-3/8 ODF	A3F Filter	7.9	5.6	3.7	2.1	8.1	5.5	3.5	1.9
BTAS-313 S-V	1-5/8 ODF	A3F Filter	13.0	8.9	5.9	3.4	13.0	8.8	5.6	3.0
BTAS-317 S-V	2-1/8 ODF	A3F Filter	15.0	11.0	7.2	4.2	16.0	11.0	6.9	3.7
BTAS-411 S-V	1-3/8 ODF	A4F Filter	17.0	12.0	8.0	4.5	17.0	12.0	7.4	4.0
BTAS-413 S-V	1-5/8 ODF	A4F Filter	20.0	15.0	10.0	5.5	21.0	14.0	9.1	4.9
BTAS-417 S-V	2-1/8 ODF	A4F Filter	28.0	20.0	13.0	7.5	29.0	20.0	12.0	6.7
BTAS-421 S-V	2-5/8 ODF	A4F Filter	34.0	24.0	16.0	9.1	35.0	24.0	15.0	8.1
BTAS-517 S-V	2-1/8 ODF	A5F Filter	33.0	24.0	16.0	9.1	34.0	24.0	15.0	8.1
BTAS-521 S-V	2-5/8 ODF	A5F Filter	44.0	32.0	21.0	12.0	45.0	31.0	20.0	11.0
BTAS-525 S-V	3-1/8 ODF	A5F Filter	54.0	39.0	25.0	15.0	56.0	38.0	24.0	13.0
BTAS-25 S-V	5/8 ODF	A2F-D Filter Drier	2.4	1.7	1.2	0.7	2.5	1.7	1.1	0.6
BTAS-27 S-V	7/8 ODF	A2F-D Filter Drier	4.0	2.8	1.9	1.1	4.1	2.8	1.8	1.0
BTAS-39 S-V	1-1/8 ODF	A3F-D Filter Drier	5.2	3.7	2.4	1.4	5.3	3.6	2.3	1.2
BTAS-311 S-V	1-3/8 ODF	A3F-D Filter Drier	7.2	5.2	3.4	1.9	7.4	5.1	3.2	1.7
BTAS-313 S-V	1-5/8 ODF	A3F-D Filter Drier	10.0	7.4	4.8	2.8	11.0	7.3	4.6	2.5
BTAS-317 S-V	2-1/8 ODF	A3F-D Filter Drier	12.0	8.5	5.7	3.3	12.0	8.4	5.4	2.9
BTAS-411 S-V	1-3/8 ODF	A4F-D Filter Drier	15.0	11.0	7.0	4.1	15.0	11.0	6.7	3.6
BTAS-413 S-V	1-5/8 ODF	A4F-D Filter Drier	15.0	11.0	7.2	4.2	16.0	11.0	6.9	3.7
BTAS-417 S-V	2-1/8 ODF	A4F-D Filter Drier	22.0	16.0	11.0	6.1	23.0	16.0	10.0	5.4
BTAS-421 S-V	2-5/8 ODF	A4F-D Filter Drier	23.0	17.0	11.0	6.3	24.0	16.0	10.0	5.6
BTAS-517 S-V	2-1/8 ODF	A5F-D Filter Drier	27.0	19.0	13.0	7.2	28.0	19.0	12.0	6.4
BTAS-521 S-V	2-5/8 ODF	A5F-D Filter Drier	32.0	23.0	15.0	8.8	33.0	23.0	14.0	7.8
BTAS-525 S-V	3-1/8 ODF	A5F-D Filter Drier	38.0	27.0	18.0	10.0	39.0	27.0	17.0	9.2
STAS-489 S-V	1-1/8 ODF	(1) F-48 Filter	13.0	8.0	5.0	2.0	13.0	8.0	5.0	2.0
STAS-4811 S-V	1-3/8 ODF	(1) F-48 Filter	15.0	10.0	6.0	3.0	15.0	10.0	6.0	3.0
STAS-4813 S-V	1-5/8 ODF	(1) F-48 Filter	19.0	12.0	7.0	5.0	20.0	12.0	7.0	4.0
STAS-4817 S-V	2-1/8 ODF	(1) F-48 Filter	24.0	15.0	11.0	6.0	25.0	15.0	10.0	5.0
STAS-4821 S-V	2-5/8 ODF	(1) F-48 Filter	29.0	20.0	14.0	7.0	30.0	20.0	13.0	6.0
STAS-9617 S-V	2-1/8 ODF	(2) F-48 Filter	27.0	18.0	11.0	6.0	28.0	18.0	10.0	5.0
STAS-9621 S-V	2-5/8 ODF	(2) F-48 Filter	37.0	25.0	16.0	8.0	38.0	25.0	15.0	7.0
STAS-9625 S-V	3-1/8 ODF	(2) F-48 Filter	65.0	52.0	38.0	21.0	79.0	61.0	43.0	20.0
STAS-489 S-V	1-1/8 ODF	(1) 48 cu in Core	8.0	6.0	4.0	1.0	8.0	6.0	4.0	1.0
STAS-4811 S-V	1-3/8 ODF	(1) 48 cu in Core	10.0	7.0	4.0	2.0	10.0	7.0	4.0	2.0
STAS-4813 S-V	1-5/8 ODF	(1) 48 cu in Core	13.0	8.0	5.0	3.0	13.0	8.0	5.0	3.0
STAS-4817 S-V	2-1/8 ODF	(1) 48 cu in Core	17.0	10.0	7.0	5.0	17.0	10.0	7.0	4.0
STAS-4821 S-V	2-5/8 ODF	(1) 48 cu in Core	19.0	13.0	8.0	5.0	20.0	13.0	8.0	4.0
STAS-9617 S-V	2-1/8 ODF	(2) 48 cu in Core	18.0	12.0	6.0	5.0	18.0	12.0	6.0	4.0
STAS-9621 S-V	2-5/8 ODF	(2) 48 cu in Core	24.0	17.0	11.0	6.0	25.0	17.0	10.0	5.0
STAS-9625 S-V	3-1/8 ODF	(2) 48 cu in Core	24.0	19.0	14.0	7.4	29.0	23.0	16.0	7.0

¹ All ratings in accordance with ARI Standard 730-04.

² Example: 1.0 tons x 3.5 = 3.5 kW

Take-Apart Suction Line Filter Drier Flow Capacities

Description	Connections	Filter Drier Cartridge	Flow Capacity In Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²														
			R-22 / R-448A / R-449A					R-407C					R-410A				
			Evaporator Temperature (°F)														
			40	20	0	-20	-40	40	20	0	-20	-40	40	20	0	-20	-40
			Pressure Drop (PSI)														
3	2	1.5	1	0.5	3	2	1.5	1	0.5	3	2	1.5	1	0.5			
ADKS 30013T	1-5/8 ODF	(3) F-100 Filter	45.0	30.0	20.0	13.0	7.0	41.7	27.3	17.7	11.3	5.8	-	-	-	-	-
ADKS 30017T	2-1/8 ODF	(3) F-100 Filter	77.0	50.0	35.0	22.0	12.0	71.4	45.5	31.0	19.2	10.0	-	-	-	-	-
ADKS 40017T	2-1/8 ODF	(4) F-100 Filter	80.0	53.0	37.0	23.0	13.0	74.2	48.2	32.8	20.0	10.8	-	-	-	-	-
ADKS 40021T	2-5/8 ODF	(4) F-100 Filter	122.0	80.0	55.0	34.0	19.0	113.1	72.7	48.7	29.6	15.8	-	-	-	-	-
ADKS 30013T	1-5/8 ODF	(3) 100 cu in Core	35.0	23.0	16.0	10.0	5.5	32.4	20.9	14.2	8.7	4.6	-	-	-	-	-
ADKS 30017T	2-1/8 ODF	(3) 100 cu in Core	56.0	37.0	25.0	16.0	8.8	51.9	33.6	22.1	13.9	7.3	-	-	-	-	-
ADKS 40017T	2-1/8 ODF	(4) 100 cu in Core	61.0	40.0	27.0	17.0	9.5	56.5	36.4	23.9	14.8	7.9	-	-	-	-	-
ADKS 40021T	2-5/8 ODF	(4) 100 cu in Core	88.0	58.0	40.0	25.0	14.0	81.6	52.7	35.4	21.8	11.6	-	-	-	-	-
BTAS-27 S-V	7/8 ODF	A2F Filter	8.8	5.7	3.9	2.5	1.3	8.2	5.2	3.5	2.2	1.1	-	-	-	-	-
BTAS-39 S-V	1-1/8 ODF	A3F Filter	14.0	8.8	5.9	3.7	2.0	13.0	8.0	5.2	3.2	1.7	-	-	-	-	-
BTAS-311 S-V	1-3/8 ODF	A3F Filter	15.0	10.0	6.6	4.1	2.2	13.9	9.1	5.8	3.6	1.8	-	-	-	-	-
BTAS-313 S-V	1-5/8 ODF	A3F Filter	24.0	16.0	11.0	6.6	3.5	22.2	14.5	9.7	5.8	2.9	-	-	-	-	-
BTAS-317 S-V	2-1/8 ODF	A3F Filter	29.0	19.0	13.0	8.1	4.3	26.9	17.3	11.5	7.1	3.6	-	-	-	-	-
BTAS-39 S-V	1-3/8 ODF	A4F Filter	31.0	20.0	14.0	8.7	4.6	28.7	18.2	12.4	7.6	3.8	-	-	-	-	-
BTAS-413 S-V	1-5/8 ODF	A4F Filter	38.0	25.0	17.0	11.0	5.7	35.2	22.7	15.1	9.6	4.7	-	-	-	-	-
BTAS-417 S-V	2-1/8 ODF	A4F Filter	53.0	34.0	23.0	15.0	7.8	49.1	30.9	20.4	13.1	6.5	-	-	-	-	-
BTAS-421 S-V	2-5/8 ODF	A4F Filter	64.0	42.0	29.0	18.0	10.0	59.3	38.2	25.7	15.7	8.3	-	-	-	-	-
BTAS-517 S-V	2-1/8 ODF	A5F Filter	63.0	41.0	28.0	18.0	9.4	58.4	37.3	24.8	15.7	7.8	-	-	-	-	-
BTAS-521 S-V	2-5/8 ODF	A5F Filter	84.0	54.0	37.0	23.0	12.0	77.9	49.1	32.8	20.0	10.0	-	-	-	-	-
BTAS-525 S-V	3-1/8 ODF	A5F Filter	103.0	67.0	46.0	29.0	15.0	95.5	60.9	40.7	25.3	12.5	-	-	-	-	-
BTAS-25 S-V	5/8 ODF	A2F-D Filter Drier	4.6	3.0	2.0	1.3	0.7	4.3	2.7	1.8	1.1	0.6	-	-	-	-	-
BTAS-27 S-V	7/8 ODF	A2F-D Filter Drier	7.5	4.9	3.3	2.1	1.1	7.0	4.5	2.9	1.8	0.9	-	-	-	-	-
BTAS-39 S-V	1-1/8 ODF	A3F-D Filter Drier	10.0	6.3	4.3	2.7	1.4	9.3	5.7	3.8	2.4	1.2	-	-	-	-	-
BTAS-311 S-V	1-3/8 ODF	A3F-D Filter Drier	14.0	8.9	6.0	3.8	2.0	13.0	8.1	5.3	3.3	1.7	-	-	-	-	-
BTAS-313 S-V	1-5/8 ODF	A3F-D Filter Drier	20.0	13.0	8.6	5.4	2.9	18.5	11.8	7.6	4.7	2.4	-	-	-	-	-
BTAS-317 S-V	2-1/8 ODF	A3F-D Filter Drier	23.0	15.0	10.0	6.3	3.4	21.3	13.6	8.9	5.5	2.8	-	-	-	-	-
BTAS-411 S-V	1-3/8 ODF	A4F-D Filter Drier	28.0	18.0	13.0	7.8	4.2	26.0	16.4	11.5	6.8	3.5	-	-	-	-	-
BTAS-413 S-V	1-5/8 ODF	A4F-D Filter Drier	29.0	19.0	13.0	8.1	4.3	26.9	17.3	11.5	7.1	3.6	-	-	-	-	-
BTAS-417 S-V	2-1/8 ODF	A4F-D Filter Drier	43.0	28.0	19.0	12.0	6.3	39.9	25.5	16.8	10.5	5.2	-	-	-	-	-
BTAS-421 S-V	2-5/8 ODF	A4F-D Filter Drier	44.0	29.0	19.0	12.0	6.5	40.8	26.4	16.8	10.5	5.4	-	-	-	-	-
BTAS-517 S-V	2-1/8 ODF	A5F-D Filter Drier	51.0	33.0	22.0	14.0	7.5	47.3	30.0	19.5	12.2	6.2	-	-	-	-	-
BTAS-521 S-V	2-5/8 ODF	A5F-D Filter Drier	61.0	40.0	27.0	17.0	9.0	56.5	36.4	23.9	14.8	7.5	-	-	-	-	-
BTAS-525 S-V	3-1/8 ODF	A5F-D Filter Drier	72.0	47.0	32.0	20.0	11.0	66.7	42.7	28.3	17.4	9.2	-	-	-	-	-
STAS-489 S-V	1-1/8 ODF	(1) F-48 Filter	22.0	14.0	10.0	6.0	2.0	20.0	13.0	9.0	5.0	2.0	27.0	17.0	12.0	7.0	3.0
STAS-4811 S-V	1-3/8 ODF	(1) F-48 Filter	28.0	17.0	12.0	7.0	3.0	26.0	15.0	11.0	6.0	2.0	34.0	21.0	15.0	9.0	4.0
STAS-4813 S-V	1-5/8 ODF	(1) F-48 Filter	35.0	20.0	15.0	8.0	4.0	32.0	18.0	13.0	7.0	3.0	42.0	24.0	18.0	10.0	5.0
STAS-4817 S-V	2-1/8 ODF	(1) F-48 Filter	47.0	30.0	20.0	10.0	5.0	44.0	27.0	18.0	9.0	4.0	57.0	36.0	25.0	12.0	6.0
STAS-4821 S-V	2-5/8 ODF	(1) F-48 Filter	60.0	40.0	25.0	15.0	7.0	56.0	36.0	22.0	13.0	6.0	73.0	49.0	31.0	19.0	9.0
STAS-9617 S-V	2-1/8 ODF	(2) F-48 Filter	50.0	30.0	20.0	12.0	6.0	46.0	27.0	18.0	10.0	5.0	61.0	36.0	25.0	15.0	8.0
STAS-9621 S-V	2-5/8 ODF	(2) F-48 Filter	70.0	43.0	28.0	17.0	8.0	65.0	39.0	25.0	15.0	7.0	85.0	52.0	34.0	21.0	10.0
STAS-9625 S-V	3-1/8 ODF	(2) F-48 Filter	101.0	82.0	65.0	46.0	22.0	94.0	75.0	58.0	40.0	18.0	122.0	100.0	80.0	57.0	28.0
STAS-489 S-V	1-1/8 ODF	(1) 48 cu in Core	15.0	9.0	7.0	4.0	1.0	14.0	8.0	6.0	3.0	1.0	18.0	11.0	9.0	5.0	1.0
STAS-4811 S-V	1-3/8 ODF	(1) 48 cu in Core	18.0	11.0	8.0	5.0	2.0	17.0	10.0	7.0	4.0	2.0	22.0	13.0	10.0	6.0	3.0
STAS-4813 S-V	1-5/8 ODF	(1) 48 cu in Core	23.0	13.0	10.0	6.0	3.0	21.0	12.0	9.0	5.0	2.0	28.0	16.0	12.0	7.0	4.0
STAS-4817 S-V	2-1/8 ODF	(1) 48 cu in Core	31.0	20.0	13.0	7.0	3.0	29.0	18.0	12.0	6.0	2.0	38.0	24.0	16.0	9.0	4.0
STAS-4821 S-V	2-5/8 ODF	(1) 48 cu in Core	40.0	27.0	17.0	10.0	5.0	37.0	25.0	15.0	9.0	4.0	49.0	33.0	21.0	12.0	6.0
STAS-9617 S-V	2-1/8 ODF	(2) 48 cu in Core	33.0	20.0	13.0	8.0	4.0	31.0	18.0	12.0	7.0	3.0	40.0	24.0	16.0	10.0	5.0
STAS-9621 S-V	2-5/8 ODF	(2) 48 cu in Core	47.0	28.0	18.0	11.0	6.0	44.0	25.0	16.0	10.0	5.0	57.0	34.0	22.0	14.0	8.0
STAS-9625 S-V	3-1/8 ODF	(2) 48 cu in Core	38.0	30.0	24.0	17.0	7.6	35.0	27.0	24.0	15.0	6.0	46.0	36.0	29.0	21.0	10.0

¹ All ratings in accordance with ARI Standard 730-04.

² Example: 1.0 tons x 3.5 = 3.5 kW

Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

Take-Apart Suction Line Filter Drier Flow Capacities

Description	Connections	Filter Drier Cartridge	Flow Capacity In Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²										
			R-502					R-404A/R-507					
			Evaporator Temperature (°F)										
			40	20	0	-20	-40	40	20	0	-20	-40	
			Pressure Drop (PSI)										
3	2	1.5	1	0.5	3	2	1.5	1	0.5				
ADKS 30013T	1-5/8 ODF	(3) F-100 Filter	38.0	24.0	16.0	9.9	5.2	37.0	24.0	16.0	10.0	5.5	
ADKS 30017T	2-1/8 ODF	(3) F-100 Filter	64.0	40.0	27.0	17.0	8.9	62.0	40.0	27.0	18.0	9.4	
ADKS 40017T	2-1/8 ODF	(4) F-100 Filter	68.0	43.0	28.0	17.0	9.2	66.0	43.0	29.0	18.0	9.8	
ADKS 40021T	2-5/8 ODF	(4) F-100 Filter	102.0	64.0	43.0	27.0	14.0	99.0	64.0	43.0	28.0	15.0	
ADKS 30013T	1-5/8 ODF	(3) 100 cu in Core	30.0	19.0	12.0	7.7	4.1	29.0	19.0	13.0	8.0	4.3	
ADKS 30017T	2-1/8 ODF	(3) 100 cu in Core	47.0	30.0	20.0	12.0	6.4	46.0	30.0	20.0	13.0	6.8	
ADKS 40017T	2-1/8 ODF	(4) 100 cu in Core	51.0	32.0	22.0	13.0	7.0	49.0	32.0	22.0	14.0	7.4	
ADKS 40021T	2-5/8 ODF	(4) 100 cu in Core	74.0	47.0	31.0	19.0	10.0	72.0	47.0	32.0	20.0	11.0	
BTAS-27 S-V	7/8 ODF	A2F Filter	7.4	4.6	3.1	1.8	0.9	7.2	4.6	3.1	1.9	1.0	
BTAS-39 S-V	1-1/8 ODF	A3F Filter	11.0	7.0	4.7	2.8	1.4	11.0	7.0	4.7	2.9	1.5	
BTAS-311 S-V	1-3/8 ODF	A3F Filter	12.0	7.8	5.2	3.1	1.6	12.0	7.8	5.2	3.2	1.7	
BTAS-313 S-V	1-5/8 ODF	A3F Filter	20.0	12.0	8.2	5.0	2.5	19.0	12.0	8.3	5.2	2.7	
BTAS-317 S-V	2-1/8 ODF	A3F Filter	25.0	15.0	10.0	6.1	3.1	24.0	15.0	10.0	6.3	3.3	
BTAS-411 S-V	1-3/8 ODF	A4F Filter	27.0	16.0	11.0	6.6	3.4	26.0	16.0	11.0	6.8	3.6	
BTAS-413 S-V	1-5/8 ODF	A4F Filter	32.0	20.0	13.0	8.1	4.1	31.0	20.0	14.0	8.4	4.4	
BTAS-417 S-V	2-1/8 ODF	A4F Filter	44.0	28.0	18.0	11.0	5.7	43.0	28.0	19.0	12.0	6.0	
BTAS-421 S-V	2-5/8 ODF	A4F Filter	54.0	34.0	23.0	14.0	6.9	52.0	34.0	23.0	14.0	7.3	
BTAS-517 S-V	2-1/8 ODF	A5F Filter	54.0	33.0	22.0	13.0	6.8	52.0	33.0	22.0	14.0	7.2	
BTAS-521 S-V	2-5/8 ODF	A5F Filter	70.0	44.0	29.0	18.0	9.0	68.0	44.0	29.0	18.0	9.6	
BTAS-525 S-V	3-1/8 ODF	A5F Filter	87.0	54.0	36.0	22.0	11.0	84.0	54.0	36.0	23.0	12.0	
BTAS-25 S-V	5/8 ODF	A2F-D Filter Drier	3.9	2.4	1.6	1.0	0.5	3.8	2.4	1.6	1.0	0.5	
BTAS-27 S-V	7/8 ODF	A2F-D Filter Drier	6.3	3.9	2.6	1.5	0.8	6.1	3.9	2.6	1.6	0.9	
BTAS-39 S-V	1-1/8 ODF	A3F-D Filter Drier	8.1	5.1	3.4	2.0	1.0	7.9	5.1	3.4	2.1	1.1	
BTAS-311 S-V	1-3/8 ODF	A3F-D Filter Drier	11.0	7.1	4.8	2.9	1.5	11.0	7.1	4.8	3.0	1.6	
BTAS-313 S-V	1-5/8 ODF	A3F-D Filter Drier	16.0	10.0	6.7	4.1	2.1	16.0	10.0	6.8	4.2	2.2	
BTAS-317 S-V	2-1/8 ODF	A3F-D Filter Drier	19.0	12.0	7.9	4.8	2.4	19.0	12.0	8.0	5.0	2.6	
BTAS-411 S-V	1-3/8 ODF	A4F-D Filter Drier	24.0	15.0	10.0	5.9	3.0	23.0	15.0	10.0	6.1	3.2	
BTAS-413 S-V	1-5/8 ODF	A4F-D Filter Drier	25.0	15.0	10.0	6.1	3.1	24.0	15.0	10.0	6.3	3.3	
BTAS-417 S-V	2-1/8 ODF	A4F-D Filter Drier	36.0	22.0	15.0	9.0	4.6	35.0	22.0	15.0	9.3	4.9	
BTAS-421 S-V	2-5/8 ODF	A4F-D Filter Drier	37.0	23.0	15.0	9.2	4.7	36.0	23.0	15.0	10.0	5.0	
BTAS-517 S-V	2-1/8 ODF	A5F-D Filter Drier	42.0	27.0	18.0	11.0	4.7	41.0	27.0	18.0	11.0	5.0	
BTAS-521 S-V	2-5/8 ODF	A5F-D Filter Drier	52.0	32.0	22.0	13.0	6.6	50.0	32.0	22.0	13.0	7.0	
BTAS-525 S-V	3-1/8 ODF	A5F-D Filter Drier	61.0	38.0	25.0	15.0	7.8	59.0	38.0	25.0	16.0	8.3	
STAS-489 S-V	1-1/8 ODF	(1) F-48 Filter	21.0	12.0	8.0	5.0	3.0	20.0	12.0	8.0	5.0	3.0	
STAS-4811 S-V	1-3/8 ODF	(1) F-48 Filter	15.0	15.0	10.0	6.0	4.0	15.0	15.0	10.0	6.0	4.0	
STAS-4813 S-V	1-5/8 ODF	(1) F-48 Filter	31.0	18.0	11.0	7.0	5.0	30.0	18.0	11.0	7.0	5.0	
STAS-4817 S-V	2-1/8 ODF	(1) F-48 Filter	41.0	25.0	15.0	9.0	7.0	40.0	25.0	15.0	9.0	7.0	
STAS-4821 S-V	2-5/8 ODF	(1) F-48 Filter	57.0	30.0	20.0	12.0	8.0	55.0	30.0	20.0	12.0	8.0	
STAS-9617 S-V	2-1/8 ODF	(2) F-48 Filter	41.0	25.0	15.0	10.0	7.0	40.0	25.0	15.0	10.0	7.0	
STAS-9621 S-V	2-5/8 ODF	(2) F-48 Filter	62.0	35.0	25.0	14.0	9.0	60.0	35.0	25.0	15.0	10.0	
STAS-9625 S-V	3-1/8 ODF	(2) F-48 Filter	73.0	59.0	47.0	34.0	19.0	80.0	63.0	50.0	35.0	18.0	
STAS-489 S-V	1-1/8 ODF	(1) 48 cu in Core	13.0	8.0	6.0	4.0	2.0	13.0	8.0	6.0	4.0	2.0	
STAS-4811 S-V	1-3/8 ODF	(1) 48 cu in Core	18.0	10.0	6.0	4.0	3.0	17.0	10.0	6.0	4.0	3.0	
STAS-4813 S-V	1-5/8 ODF	(1) 48 cu in Core	21.0	12.0	7.0	5.0	4.0	20.0	12.0	7.0	5.0	4.0	
STAS-4817 S-V	2-1/8 ODF	(1) 48 cu in Core	28.0	17.0	10.0	6.0	5.0	27.0	17.0	10.0	6.0	5.0	
STAS-4821 S-V	2-5/8 ODF	(1) 48 cu in Core	38.0	20.0	13.0	8.0	6.0	37.0	20.0	13.0	8.0	6.0	
STAS-9617 S-V	2-1/8 ODF	(2) 48 cu in Core	28.0	17.0	11.0	7.0	5.0	27.0	17.0	11.0	7.0	5.0	
STAS-9621 S-V	2-5/8 ODF	(2) 48 cu in Core	41.0	23.0	17.0	10.0	7.0	40.0	23.0	17.0	10.0	7.0	
STAS-9625 S-V	3-1/8 ODF	(2) 48 cu in Core	27.0	22.0	18.0	13.0	6.7	30.0	24.0	18.0	13.0	6.5	

¹ All ratings in accordance with ARI Standard 730-04.

² Example: 1.0 tons x 3.5 = 3.5 kW

A-AS Suction Accumulator Capacity Tables in Tons of Refrigeration

DESCRIPTION	R-134a / R-450A / R-513A					R-404A/R-507				
	-40°F	-20°F	0°F	+20°F	+40°F	-40°F	-20°F	0°F	+20°F	+40°F
A-AS 3 84	0.20	0.30	0.60	0.80	1.20	0.20	0.40	0.80	1.00	1.30
A-AS 3 105	0.30	0.50	0.80	1.20	1.70	0.40	0.60	1.20	1.60	2.00
A-AS 3 125	0.30	0.50	0.80	1.20	1.70	0.40	0.60	1.20	1.60	2.00
A-AS 3 126	0.40	0.60	1.00	1.60	2.30	0.40	0.70	1.50	2.00	2.60
A-AS 3 145	0.30	0.50	0.80	1.20	1.70	0.40	0.60	1.20	1.60	2.00
A-AS 3 146	0.40	0.60	1.00	1.60	2.30	0.40	0.70	1.50	2.00	2.60
A-AS 4 64	0.20	0.30	0.60	0.80	1.20	0.20	0.40	0.80	1.00	1.30
A-AS 4 65	0.30	0.50	0.80	1.20	1.70	0.40	0.60	1.20	1.60	2.00
A-AS 4 105	0.30	0.50	0.80	1.20	1.70	0.40	0.60	1.20	1.60	2.00
A-AS 4 106	0.40	0.60	1.00	1.60	2.30	0.40	0.70	1.50	2.00	2.60
A-AS 5 96	0.40	0.60	1.00	1.60	2.30	0.40	0.70	1.50	2.00	2.60
A-AS 5 97	0.70	1.10	1.80	2.80	4.00	0.80	1.30	2.70	3.60	4.60
A-AS 5 126	0.40	0.60	1.00	1.60	2.30	0.40	0.70	1.50	2.00	2.60
A-AS 5 127	0.70	1.10	1.80	2.80	4.00	0.80	1.30	2.70	3.60	4.60
A-AS 5 137	0.70	1.10	1.80	2.80	4.00	0.80	1.30	2.70	3.60	4.60
A-AS 5 139	1.30	2.00	3.10	5.00	7.20	1.40	2.10	4.40	5.90	7.60
A-AS 5 179	1.90	3.00	3.10	5.00	7.20	1.40	2.10	4.40	5.90	7.60
A-AS 5 1711	1.90	3.00	4.60	7.30	10.70	2.20	3.40	7.20	9.60	12.20
A-AS 6 117	0.70	1.10	1.80	2.80	4.00	0.80	1.30	2.70	3.60	4.60
A-AS 6 137	0.70	1.10	1.80	2.80	4.00	0.80	1.30	2.70	3.60	4.60
A-AS 6 139	1.30	2.00	3.10	5.00	7.20	1.40	2.10	4.40	5.90	7.60
A-AS 6 1411	1.90	3.00	4.60	7.30	10.70	2.20	3.40	7.20	9.60	12.20
A-AS 6 1713	3.00	4.80	7.30	11.70	17.00	3.30	5.10	10.70	14.20	18.20
A-AS 6 2013	3.00	4.80	7.30	11.70	17.00	3.30	5.10	10.70	14.20	18.20
A-AS 6 2513	3.00	4.80	7.30	11.70	17.00	3.30	5.10	10.70	14.20	18.20

DESCRIPTION	R-22 / R-448A / R-449A					R-502				
	-40°F	-20°F	0°F	+20°F	+40°F	-40°F	-20°F	0°F	+20°F	+40°F
A-AS 3 84	0.40	0.60	0.90	1.40	2.00	0.30	0.50	0.80	1.30	1.80
A-AS 3 105	0.50	0.80	1.40	2.10	3.00	0.50	0.80	1.20	1.90	2.70
A-AS 3 125	0.50	0.80	1.40	2.10	3.00	0.50	0.80	1.20	1.90	2.70
A-AS 3 126	0.72	1.10	1.80	2.80	4.00	0.60	1.00	1.60	2.50	3.50
A-AS 3 145	0.50	0.80	1.40	2.10	3.00	0.60	0.80	1.20	1.90	2.70
A-AS 3 146	0.72	1.10	1.80	2.80	4.00	0.60	1.00	1.60	2.50	3.50
A-AS 4 64	0.40	0.60	0.90	1.40	2.00	0.30	0.50	0.80	1.30	1.80
A-AS 4 65	0.50	0.80	1.40	2.10	3.00	0.50	0.80	1.20	1.90	2.70
A-AS 4 105	0.50	0.80	1.40	2.10	3.00	0.50	0.80	1.20	1.90	2.70
A-AS 4 106	0.72	1.10	1.80	2.80	4.00	0.60	1.00	1.60	2.50	3.50
A-AS 5 96	0.72	1.10	1.80	2.80	4.00	0.60	1.00	1.60	2.50	3.50
A-AS 5 97	1.30	2.00	3.30	5.10	7.30	1.10	1.70	2.80	4.30	6.20
A-AS 5 126	0.72	1.10	1.80	2.80	4.00	0.60	1.00	1.60	2.50	3.50
A-AS 5 127	1.30	2.00	3.30	5.10	7.30	1.10	1.70	2.80	4.30	6.20
A-AS 5 137	1.30	2.00	3.30	5.10	7.30	1.10	1.70	2.80	4.30	6.20
A-AS 5 139	2.10	3.30	5.30	8.30	11.80	1.90	2.90	4.60	7.10	10.20
A-AS 5 179	2.10	3.30	5.30	8.30	11.80	1.90	2.90	4.60	7.10	10.20
A-AS 5 1711	3.40	5.30	8.50	13.20	18.80	3.00	4.60	7.40	11.60	16.50
A-AS 6 117	1.30	2.00	3.30	5.10	7.30	1.10	1.70	2.80	4.30	6.20
A-AS 6 137	1.30	2.00	3.30	5.10	7.30	1.10	1.70	2.80	4.30	6.20
A-AS 6 139	2.10	3.30	5.30	8.30	11.80	1.90	2.90	4.60	7.10	10.20
A-AS 6 1411	3.40	5.30	8.50	13.20	18.80	3.00	4.60	7.40	11.60	16.50
A-AS 6 1713	5.10	8.00	12.80	20.00	28.50	4.40	6.90	11.00	17.20	24.50
A-AS 6 2013	5.10	8.00	12.80	20.00	28.50	4.40	6.90	11.00	17.20	24.50
A-AS 6 2513			12.80	20.80	28.50	4.40	6.90	11.00	17.20	24.50

The maximum capacity in tons recommended is based on a pressure drop through the accumulator equivalent to 1.0°F.

- Note:**
- 1) The minimum system capacity in tons must be no less than 15% of the stated capacity in order to ensure a positive return of oil.
 - 2) All of the data is based on tons of refrigeration and is not related to horsepower.
 - 3) Minimum evaporator temperature of -40°F. Minimum temperature of the suction gas through the accumulator is 12°F.

DCFm Charge Calculations

How to Calculate DCFm Charge

Example:

System: 9.5 tons, R-404A

Evaporator Temperature: 25° F

Condensing Temperature: 115° F

In the table for R-404A, search for the value corresponding to the temperatures of evaporation and condensation. This is the DCFm/ton factor. At 25°F evaporator temperature and 115°F condensing temperature, the DCFm/ton is .618. Multiply this by the system tonnage. Use the resulting value to select the proper oil separator. DCFm values can be found on the oil separator catalog pages. Select an oil separator with a capacity greater than or equal to the value obtained.

Note: The connection of the separator must never be less than the diameter of the discharge line

Example:

$$0.72 \frac{\text{DCFm}}{\text{ton}} \times 10 \text{ ton} = 7.2 \text{ CFM}$$

Oil Separator selected: AF-58889

DCFm = Cubic feet per minute

		R-22								
		Oil Separator DCFm/Ton Factor								
		Condensing Temperature (°F)								
Evaporating Temperature (°F)		130	125	120	115	110	105	100	95	90
	-40	0.633	0.659	0.687	0.717	0.750	0.786	0.824	0.865	0.910
	-35	0.626	0.652	0.680	0.710	0.743	0.778	0.816	0.857	0.902
	-30	0.619	0.645	0.673	0.704	0.736	0.771	0.809	0.850	0.894
	-25	0.613	0.639	0.667	0.697	0.729	0.764	0.802	0.843	0.887
	-20	0.607	0.633	0.660	0.690	0.723	0.758	0.795	0.836	0.880
	-15	0.601	0.626	0.654	0.684	0.716	0.751	0.788	0.829	0.873
	-10	0.595	0.621	0.648	0.678	0.710	0.745	0.782	0.822	0.866
	-5	0.589	0.615	0.642	0.672	0.704	0.739	0.776	0.816	0.859
	0	0.584	0.609	0.637	0.666	0.698	0.733	0.770	0.809	0.853
	5	0.578	0.604	0.631	0.661	0.693	0.727	0.764	0.803	0.846
	10	0.573	0.599	0.626	0.656	0.687	0.721	0.758	0.797	0.840
	15	0.568	0.594	0.621	0.650	0.682	0.716	0.752	0.792	0.834
	20	0.564	0.589	0.616	0.645	0.677	0.710	0.747	0.786	0.828
	25	0.559	0.584	0.611	0.640	0.672	0.705	0.742	0.781	0.823
	30	0.555	0.580	0.607	0.636	0.667	0.700	0.736	0.775	0.817
35	0.550	0.575	0.602	0.631	0.662	0.696	0.732	0.770	0.812	
40	0.546	0.571	0.598	0.627	0.658	0.691	0.727	0.765	0.807	
45	0.542	0.567	0.594	0.623	0.653	0.687	0.722	0.761	0.802	

		R-404A								
		Oil Separator DCFm/Ton Factor								
		Condensing Temperature (°F)								
Evaporating Temperature (°F)		130	125	120	115	110	105	100	95	90
	-40	0.751	0.759	0.771	0.787	0.807	0.830	0.856	0.885	0.918
	-35	0.731	0.740	0.753	0.770	0.790	0.814	0.840	0.870	0.903
	-30	0.712	0.722	0.736	0.754	0.775	0.798	0.825	0.855	0.888
	-25	0.694	0.705	0.720	0.738	0.760	0.784	0.811	0.841	0.874
	-20	0.677	0.689	0.705	0.724	0.745	0.770	0.797	0.827	0.860
	-15	0.661	0.674	0.691	0.710	0.731	0.756	0.783	0.814	0.847
	-10	0.646	0.660	0.677	0.696	0.718	0.743	0.771	0.801	0.834
	-5	0.632	0.646	0.664	0.683	0.706	0.731	0.758	0.789	0.822
	0	0.618	0.633	0.651	0.671	0.694	0.719	0.747	0.777	0.810
	5	0.605	0.621	0.639	0.659	0.682	0.708	0.735	0.766	0.799
	10	0.593	0.609	0.628	0.648	0.671	0.697	0.725	0.755	0.788
	15	0.581	0.598	0.617	0.638	0.661	0.686	0.714	0.745	0.778
	20	0.570	0.587	0.606	0.628	0.651	0.676	0.704	0.735	0.768
	25	0.560	0.577	0.596	0.618	0.641	0.667	0.695	0.725	0.758
	30	0.550	0.568	0.587	0.609	0.632	0.658	0.686	0.716	0.749
35	0.540	0.558	0.578	0.600	0.623	0.649	0.677	0.707	0.740	
40	0.532	0.550	0.570	0.591	0.615	0.641	0.669	0.699	0.732	
45	0.523	0.542	0.562	0.583	0.607	0.633	0.661	0.691	0.723	

		R-407C								
		Oil Separator DCFm/Ton Factor								
		Condensing Temperature (°F)								
Evaporating Temperature (°F)		130	125	120	115	110	105	100	95	90
	-40	0.669	0.695	0.722	0.753	0.786	0.822	0.862	0.905	0.952
	-35	0.659	0.684	0.712	0.743	0.776	0.812	0.851	0.894	0.941
	-30	0.649	0.674	0.702	0.733	0.766	0.802	0.841	0.884	0.930
	-25	0.640	0.665	0.693	0.723	0.756	0.792	0.831	0.874	0.920
	-20	0.630	0.656	0.684	0.714	0.747	0.782	0.821	0.864	0.910
	-15	0.621	0.647	0.675	0.705	0.738	0.773	0.812	0.854	0.900
	-10	0.613	0.638	0.666	0.696	0.729	0.764	0.803	0.845	0.891
	-5	0.605	0.630	0.658	0.688	0.720	0.756	0.794	0.836	0.882
	0	0.597	0.622	0.650	0.680	0.712	0.748	0.786	0.828	0.873
	5	0.589	0.614	0.642	0.672	0.704	0.740	0.778	0.819	0.864
	10	0.582	0.607	0.635	0.664	0.697	0.732	0.770	0.811	0.856
	15	0.575	0.600	0.627	0.657	0.689	0.724	0.762	0.803	0.848
	20	0.568	0.593	0.620	0.650	0.682	0.717	0.755	0.796	0.840
	25	0.561	0.586	0.614	0.643	0.675	0.710	0.748	0.788	0.833
	30	0.555	0.580	0.607	0.637	0.669	0.703	0.741	0.781	0.825
35	0.549	0.574	0.601	0.631	0.662	0.697	0.734	0.774	0.818	
40	0.543	0.568	0.595	0.625	0.656	0.691	0.728	0.768	0.812	
45	0.537	0.563	0.590	0.619	0.650	0.685	0.722	0.762	0.805	

		R-448A								
		Oil Separator DCFm/Ton Factor								
		Condensing Temperature (°F)								
Evaporating Temperature (°F)		130	125	120	115	110	105	100	95	90
	-40	0.662	0.684	0.709	0.736	0.766	0.799	0.835	0.875	0.917
	-35	0.651	0.673	0.698	0.725	0.756	0.788	0.824	0.863	0.906
	-30	0.640	0.663	0.688	0.715	0.745	0.778	0.814	0.853	0.895
	-25	0.630	0.652	0.677	0.705	0.735	0.768	0.803	0.842	0.885
	-20	0.620	0.642	0.668	0.695	0.725	0.758	0.793	0.832	0.874
	-15	0.610	0.633	0.658	0.686	0.716	0.748	0.784	0.822	0.864
	-10	0.601	0.624	0.649	0.677	0.706	0.739	0.774	0.813	0.855
	-5	0.592	0.615	0.640	0.668	0.698	0.730	0.765	0.804	0.845
	0	0.583	0.607	0.632	0.659	0.689	0.722	0.757	0.795	0.836
	5	0.575	0.599	0.624	0.651	0.681	0.713	0.748	0.786	0.828
	10	0.568	0.591	0.616	0.643	0.673	0.705	0.740	0.778	0.819
	15	0.560	0.583	0.609	0.636	0.666	0.698	0.732	0.770	0.811
	20	0.553	0.576	0.601	0.629	0.658	0.690	0.725	0.762	0.803
	25	0.546	0.569	0.594	0.622	0.651	0.683	0.718	0.755	0.796
	30	0.539	0.563	0.588	0.615	0.644	0.676	0.711	0.748	0.788
35	0.533	0.556	0.581	0.609	0.638	0.670	0.704	0.741	0.781	
40	0.527	0.550	0.575	0.602	0.632	0.663	0.697	0.734	0.774	
45	0.521	0.544	0.569	0.596	0.626	0.657	0.691	0.728	0.768	

DCFm Charge Calculations

		R-507A								
		Oil Separator DCFM/Ton Factor								
		Condensing Temperature (°F)								
		130	125	120	115	110	105	100	95	90
Evaporating Temperature (°F)	-40	0.747	0.753	0.763	0.777	0.795	0.816	0.841	0.869	0.900
	-35	0.726	0.733	0.745	0.760	0.778	0.800	0.825	0.853	0.884
	-30	0.707	0.715	0.727	0.743	0.762	0.784	0.810	0.838	0.869
	-25	0.688	0.698	0.711	0.727	0.747	0.770	0.795	0.824	0.855
	-20	0.671	0.681	0.695	0.712	0.733	0.755	0.781	0.810	0.841
	-15	0.654	0.666	0.680	0.698	0.719	0.742	0.768	0.797	0.828
	-10	0.638	0.651	0.666	0.685	0.705	0.729	0.755	0.784	0.816
	-5	0.624	0.637	0.653	0.672	0.693	0.716	0.743	0.772	0.803
	0	0.610	0.624	0.640	0.659	0.681	0.705	0.731	0.760	0.792
	5	0.596	0.611	0.628	0.647	0.669	0.693	0.720	0.749	0.780
	10	0.584	0.599	0.617	0.636	0.658	0.682	0.709	0.738	0.770
	15	0.572	0.588	0.606	0.625	0.647	0.672	0.698	0.727	0.759
	20	0.561	0.577	0.595	0.615	0.637	0.662	0.688	0.718	0.749
	25	0.550	0.567	0.585	0.605	0.628	0.652	0.679	0.708	0.740
	30	0.540	0.557	0.576	0.596	0.619	0.643	0.670	0.699	0.731
	35	0.531	0.548	0.567	0.587	0.610	0.634	0.661	0.690	0.722
	40	0.528	0.545	0.564	0.585	0.607	0.632	0.659	0.688	0.719
45	0.513	0.531	0.550	0.571	0.594	0.618	0.645	0.674	0.705	

		R-410A								
		Oil Separator DCFM/Ton Factor								
		Condensing Temperature (°F)								
		130	125	120	115	110	105	100	95	90
Evaporating Temperature (°F)	-40	0.397	0.415	0.433	0.453	0.475	0.498	0.523	0.549	0.578
	-35	0.392	0.410	0.429	0.449	0.470	0.493	0.518	0.544	0.573
	-30	0.388	0.405	0.424	0.444	0.465	0.488	0.513	0.539	0.568
	-25	0.383	0.401	0.419	0.439	0.461	0.484	0.508	0.535	0.563
	-20	0.379	0.397	0.415	0.435	0.456	0.479	0.504	0.530	0.559
	-15	0.375	0.392	0.411	0.431	0.452	0.475	0.500	0.526	0.554
	-10	0.371	0.388	0.407	0.427	0.448	0.471	0.495	0.522	0.550
	-5	0.367	0.385	0.403	0.423	0.444	0.467	0.491	0.518	0.546
	0	0.364	0.381	0.400	0.420	0.441	0.463	0.488	0.514	0.542
	5	0.360	0.378	0.396	0.416	0.437	0.460	0.484	0.510	0.538
	10	0.357	0.374	0.393	0.413	0.434	0.456	0.480	0.506	0.534
	15	0.354	0.371	0.390	0.410	0.431	0.453	0.477	0.503	0.531
	20	0.351	0.368	0.387	0.406	0.427	0.450	0.474	0.500	0.527
	25	0.348	0.365	0.384	0.404	0.425	0.447	0.471	0.496	0.524
	30	0.345	0.363	0.381	0.401	0.422	0.444	0.468	0.494	0.521
	35	0.343	0.360	0.379	0.398	0.419	0.441	0.465	0.491	0.518
	40	0.340	0.358	0.376	0.396	0.417	0.439	0.463	0.488	0.516
45	0.338	0.356	0.374	0.394	0.414	0.437	0.460	0.486	0.513	

		R-449A								
		Oil Separator DCFM/Ton Factor								
		Condensing Temperature (°F)								
		130	125	120	115	110	105	100	95	90
Evaporating Temperature (°F)	-40	0.622	0.648	0.676	0.707	0.739	0.774	0.812	0.853	0.898
	-35	0.614	0.640	0.668	0.698	0.730	0.765	0.803	0.844	0.888
	-30	0.606	0.632	0.659	0.689	0.722	0.757	0.794	0.835	0.879
	-25	0.598	0.624	0.651	0.681	0.713	0.748	0.785	0.826	0.869
	-20	0.590	0.616	0.644	0.673	0.705	0.740	0.777	0.817	0.860
	-15	0.583	0.608	0.636	0.666	0.697	0.732	0.769	0.808	0.851
	-10	0.576	0.601	0.629	0.658	0.690	0.724	0.760	0.800	0.843
	-5	0.569	0.594	0.621	0.651	0.682	0.716	0.753	0.792	0.835
	0	0.562	0.587	0.615	0.644	0.675	0.709	0.745	0.784	0.827
	5	0.556	0.581	0.608	0.637	0.668	0.702	0.738	0.777	0.819
	10	0.549	0.575	0.601	0.630	0.661	0.695	0.731	0.769	0.811
	15	0.543	0.568	0.595	0.624	0.655	0.688	0.724	0.762	0.804
	20	0.538	0.563	0.589	0.618	0.648	0.682	0.717	0.755	0.797
	25	0.532	0.557	0.583	0.612	0.642	0.675	0.711	0.749	0.790
	30	0.527	0.551	0.578	0.606	0.636	0.669	0.704	0.742	0.783
	35	0.521	0.546	0.572	0.600	0.631	0.663	0.698	0.736	0.777
	40	0.516	0.541	0.567	0.595	0.625	0.658	0.692	0.730	0.771
45	0.512	0.536	0.562	0.590	0.620	0.652	0.687	0.724	0.765	

		R-134A								
		Oil Separator DCFM/Ton Factor								
		Condensing Temperature (°F)								
		130	125	120	115	110	105	100	95	90
Evaporating Temperature (°F)	-40	0.998	1.032	1.070	1.113	1.159	1.210	1.266	1.328	1.395
	-35	0.980	1.015	1.053	1.095	1.141	1.192	1.248	1.310	1.377
	-30	0.963	0.998	1.036	1.078	1.124	1.175	1.231	1.292	1.359
	-25	0.946	0.981	1.019	1.062	1.108	1.158	1.214	1.275	1.341
	-20	0.930	0.965	1.004	1.046	1.092	1.142	1.197	1.258	1.324
	-15	0.915	0.950	0.988	1.030	1.076	1.126	1.181	1.241	1.307
	-10	0.900	0.935	0.973	1.015	1.061	1.111	1.166	1.226	1.291
	-5	0.886	0.921	0.959	1.001	1.047	1.096	1.151	1.210	1.275
	0	0.872	0.907	0.945	0.987	1.032	1.082	1.136	1.195	1.260
	5	0.859	0.894	0.932	0.973	1.019	1.068	1.122	1.181	1.245
	10	0.846	0.881	0.919	0.960	1.006	1.055	1.108	1.167	1.231
	15	0.834	0.869	0.906	0.948	0.993	1.042	1.095	1.153	1.217
	20	0.822	0.857	0.894	0.936	0.980	1.029	1.082	1.140	1.203
	25	0.810	0.845	0.883	0.924	0.968	1.017	1.070	1.127	1.190
	30	0.799	0.834	0.871	0.912	0.957	1.005	1.057	1.115	1.177
	35	0.789	0.823	0.861	0.901	0.945	0.993	1.046	1.103	1.165
	40	0.778	0.813	0.850	0.890	0.934	0.982	1.034	1.091	1.153
45	0.768	0.803	0.840	0.880	0.924	0.971	1.023	1.080	1.141	

High Efficiency Centrifugal Oil Separator

The High Efficiency Centrifugal Oil Separator is used in ultra-low temperature systems with long refrigerant lines or inherent oil return problems. It is also used on multiple compressor racks for supermarkets and air conditioning systems for use with CFCs, HCFCs, HFCs, and their lubricants. Suitable for use with R-410A.

Features

- Internal oil collection screen
- Hermetic welded or accessible bolted flange construction
- Corrosion resistant epoxy powder paint
- High efficiency (99%) centrifugal separation
- R-410A pressure rated



Specifications

- Maximum working pressure: 450 psi - flanged models*
600 psi - welded models*
- UL/CUL file number: SA8547

Nomenclature example: A-FC 8241717H

A	F	C	8	24	17	17	H
Series	F = Flanged W = Welded	Centrifugal	Diameter (in)	Length (in)	Inlet Connection in 1/8"	Outlet Connection in 1/8"	5" Legs Standard H = 10" Legs

Replacement Parts

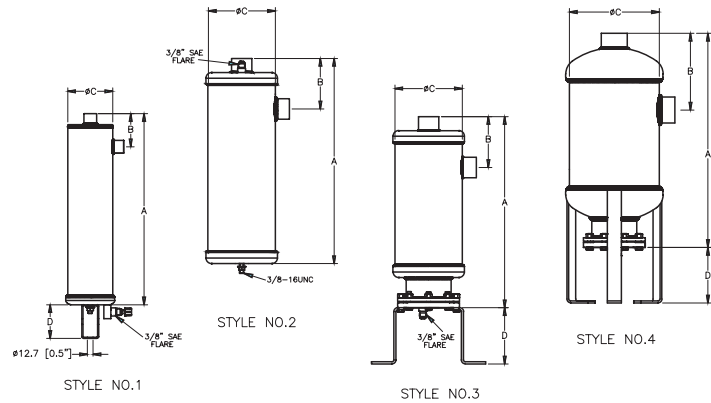
PCN	Part	Contains
065847	Float Assembly Kit*	Flange w/intergral float ass'y and flange gasket
065849	Gasket Kit	Flange gasket

*Repairs AC & R series S1900 Standard and 5200 Helical Oil Separators

Standard Product Offering

Ordering Information

PCN	Description	Solder Connection Size	Dimensions			
			A	B	C	D
065895*	A-WC 41777	7/8	17.01	2.95	4.00	2.95
065896*	A-WC 41999	1 1/8	19.02	3.07		
066094*	A-WC 6181111	1 3/8	18.26	4.05	6.0	
066095*	A-WC 6181313	1 5/8		4.63		
066096*	A-WC 6181717	2 1/8	18.38	4.76		
065930	A-FC 6221111	1 3/8	17.00	3.94	6.0	5.00
065931	A-FC 6221111H			10.00		
065362	A-FC 6221313	1 5/8	17.00	4.53	6.0	5.00
065932	A-FC 6221313H					10.00
065933	A-FC 6221717	2 1/8	17.13	4.65	6.0	5.00
065934	A-FC 6221717H					10.00
065276	A-FC 8241717	2 1/8	19.06	6.83	8.0	5.00
065935	A-FC 8241717H					10.00
065936	A-FC 10272121	2 5/8	22.10	6.11	10.00	5.00
065937	A-FC 10272121H					10.00
065938	A-FC 12302525H	3 1/8	25.10	7.05	12.00	10.00



Capacity Table

Description	Solder Connection Size (ODF)	Style Number	Shell O.D.	Maximum Capacity of Refrigeration at Evaporator Temperature																Discharge Maximum CFM	Oil Pre-Charge Amount (oz.)	Replaceable Float PCN
				R-134a /R-450A /R-513A						R-22/R-407C /R-448A/R-449A				R404A/507				R-410A				
				-40F		+40F		-40F		+40F		-40F		+40F		-40F		+40F				
				Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW			
A-WC 41777	7/8"	1	4"	5.1	18.1	6.3	22.1	7.4	26.2	8.9	31.2	7.1	25.0	9.4	32.9	12.2	42.8	13.8	48.3	6.74	17	N/A
A-WC 41999	1 1/8"			8.8	31.0	10.8	38.0	12.8	44.9	15.2	53.6	12.2	42.8	16.1	56.4	20.9	73.4	23.7	83.3	11.55		
A-WC 6181111	1 3/8"	2	6"	12.2	42.8	14.9	52.4	17.6	61.9	21.0	73.9	16.8	59.1	22.1	77.9	28.8	101.2	32.7	114.9	15.94	21	065847
A-WC 6181313	1 5/8"			18.7	65.6	22.8	80.3	27.0	94.8	32.2	113.2	25.8	90.6	33.9	119.3	44.1	155.1	50.1	176.0	24.42		
A-WC 6181717	2 1/8"			23.9	84.0	29.2	102.8	34.5	121.4	41.2	145.0	33.0	116.0	43.5	152.8	56.5	198.6	64.1	225.4	31.26		
A-FC 6221111	1 3/8"	3	6"	12.2	42.8	14.9	52.4	17.6	61.9	21.0	73.9	16.8	59.1	22.1	77.9	Not Available				6.74	N/A	
A-FC 6221111H	1 5/8"			18.7	65.6	22.8	80.3	27.0	94.8	32.2	113.2	25.8	90.6	33.9	119.3							
A-FC 6221313H				23.9	84.0	29.2	102.8	34.5	121.4	41.2	145.0	33.0	116.0	43.5	152.8							
A-FC 6221717	2 1/8"	4	8"	29.1	102.3	35.6	125.1	42.0	147.8	50.2	176.5	40.1	141.2	52.9	186.1	Not Available				6.74	N/A	
A-FC 8241717H				10"	50.5	177.5	61.7	217.1	72.9	256.5	87.1	306.3	69.7	245.0	91.8							322.8
A-FC 10272121	2 5/8"	4	10"	50.5	177.5	61.7	217.1	72.9	256.5	87.1	306.3	69.7	245.0	91.8	322.8	Not Available				6.74	N/A	
A-FC 10271212H				12"	67.9	238.9	83.1	292.1	98.1	345.2	117.2	412.2	93.7	329.7	123.5							434.4
A-FC 12302525H	3 1/8"			67.9	238.9	83.1	292.1	98.1	345.2	117.2	412.2	93.7	329.7	123.5	434.4	Not Available				6.74	N/A	

A-W & A-F Oil Separators

The A-W and A-F are used for multiple compressor racks in supermarkets and air conditioning systems for use with HCFCs, HFCs and their lubricants.

Features

- Hermetic welded or accessible bolted flange construction
- Solid copper connections
- Corrosion resistant epoxy powder paint



Nomenclature example: AW 5582 4

A	W	5582	4
Series	W = Welded F = Flanged	Model Number	Connection Size (in 1/8")

Specifications

- Maximum working pressure: 450 psi
- UL/CUL file number: SA10468

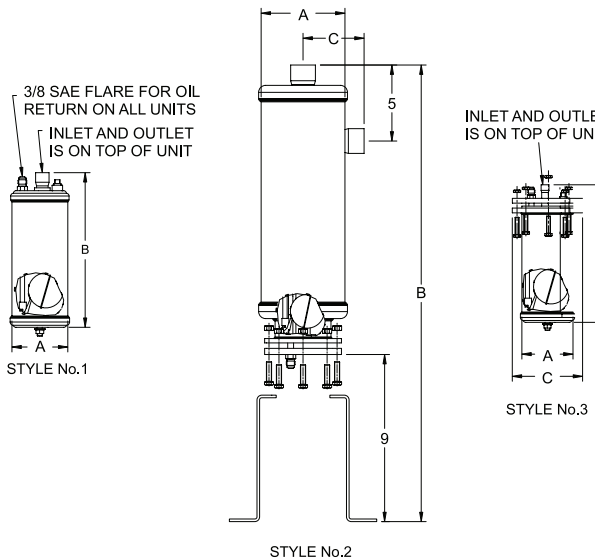
Ordering Information* and Capacity Table

Description				R-12				R-22/R-407C R-448A/R-449A				R-502				R-134a/R-450A/R-513A				R-404A/R-507			
FLANGED	PCN	SEALED	PCN	-40 F/C		40F (4C)		-40F/C		40F (4C)		-40F/C		40F (4C)		-40F/C		40F (4C)		-40F/C		40F (4C)	
				Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW
A-F 58824	060877	A-W 55824	060933	1	3.5	1.5	5.3	1.5	5.3	2	7.1	1.5	5.3	2	7.08	1	3.5	1.8	6.2	1.5	5.3	2	7.0
A-F 58855	060878	A-W 55855	060934	3	10.6	4	14.2	4.5	15.9	5.5	19.5	4.8	16.8	5.8	20.4	3.3	11.5	4.5	15.9	4	14.2	5.5	19.0
A-F 58877	060879	A-W 55877	060931	4.5	15.9	5.5	19.5	7	24.8	8	28.3	7.5	26.6	8.5	30.1	4.8	16.8	6.5	23	6.5	23	8.5	30.0
A-F 58889	060759	A-W 55889	060974	6	21.2	7.5	26.6	9	31.9	11	37.2	9.5	33.6	11.5	40.7	6.5	23	8.5	30.1	8.5	30.1	11	38.0
A-F 589011	060760	A-W 559011	060930	7.5	26.6	10	35.4	11.5	40.7	14	47.8	12	42.5	14.5	51.3	8	28.3	11.5	40.7	10.5	37.2	14	49.0
A-F 589213	060761	A-W 559213	060975	9	31.9	11.5	40.7	14	49.6	18	62	16	56.6	17.5	62	9.5	33.6	13.3	46.9	14	49.6	17	60.0
-	-	A-W 569011	060978	9	31.7	12	42.3	13	45.8	14	49.8	15	52.8	20	70.4	9.5	33.4	13.7	48.2	11	38.7	19	66.9
A-F 579213	060875	A-W 569213	060979	11	38.9	14	49.6	16	56.6	18	63.7	20	70.8	24	85	11.8	41.6	16	56.6	17.5	62	23	81
A-F 579417	060876	A-W 569417	060980	17	60.2	22	77.9	25	88.5	30	106	30	106	35	124	18	63.7	25.6	89.4	26	92.	34	121

*See replacement parts page. Repair kits for style 2 only.

Standard Product Offering

Dimensional Data



Seal Units: A-W

Description	Style No.	Connection Size	Dimensions (in)		Replaceable Float PCN	Discharge Maximum CFM	Oil Pre-charge Amount (oz)		
			A	B					
A-W 55824	1	1/2 ODF	4.0	10.75	N/A	1.49	17		
A-W 55855		5/8 ODF		13.2		3.42			
A-W 55877		7/8 ODF		15.0		6.05			
A-W 55889		1-1/8 ODF		16.25		8.28			
A-W 559011		1-3/8 ODF		19.5		9.99			
A-W 559213		1-5/8 ODF		19.88		10.66			
A-W 569011		1-3/8 ODF		15.75		12.27		N/A	20
A-W 569213		1-5/8 ODF		19.0		14.51			
A-W 569417	2-1/8 ODF	19.5	21.29						

Flanged Units: A-F

Description	Style No.	Connection Size	Dimensions (in)			Replaceable Float PCN	Discharge Maximum CFM	Oil Pre-charge Amount (oz)
			A	B	C			
A-F 58824	3	1/2 ODF	4.0	10.5	5.5	N/A	1.49	17
A-F 58855		5/8 ODF		15.0			3.42	
A-F 58877		7/8 ODF		18.0			6.05	
A-F 58889		1 1/8 ODF		21.25			8.28	
A-F 589011		1 3/8 ODF		21.37			9.99	
A-F 589213		1 5/8 ODF		21.75			10.66	
A-F 579213	2	1 5/8 ODF	6.0	20.12	4.37	065847	23.93	20
A-F 579417		2 1/8 ODF	6.0	20.31			4.63	

AOR Oil Reservoirs

The AOR oil reservoir is a holding vessel for stand-by oil necessary for the operation of commercial refrigeration systems. It is a direct replacement of popular competitive models.

Features

- Two sight glasses with floating ball indicators - 2 gallon model
- Three sight glasses with floating ball indicators - 4 gallon model
- 3/8" flare rotolock valves on top and bottom
- Corrosion resistant epoxy powder paint finish
- Standard mounting stud 3/8 x 16 TPI

Nomenclature example: AOR-3

AOR	3
Series	Gallons

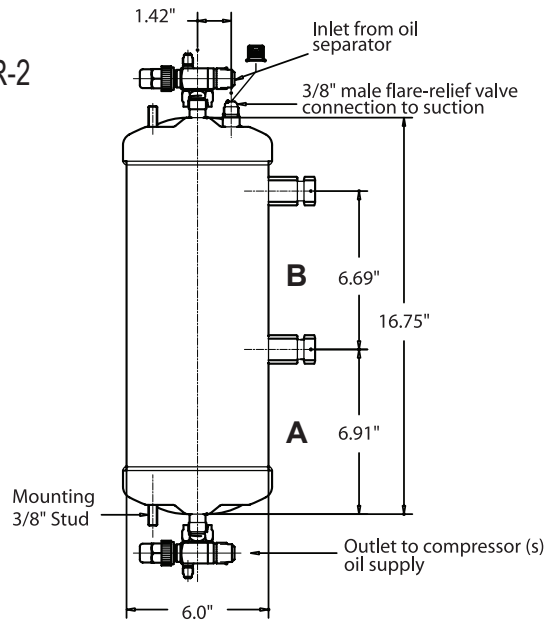


Specifications

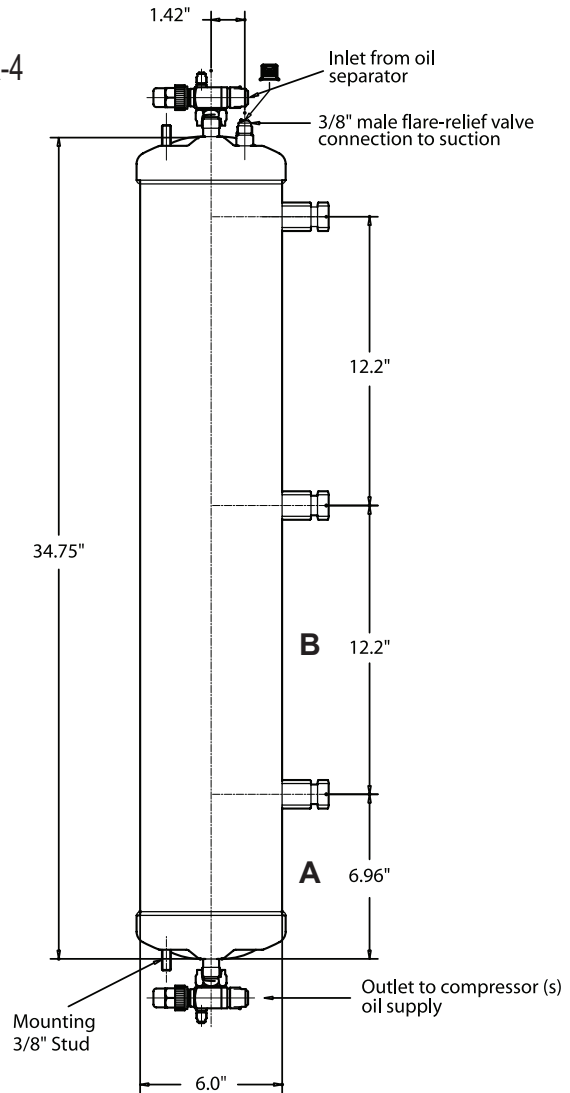
- Maximum working pressure: 450 psi
- UL/CUL file number: SA8547

Dimensional Data

AOR-2



AOR-4



Ordering Information

PCN	Description	Total Volume Gallons	A Level Volume (gals)	B Level Volume (gals)	Length (in)	Number of sight glasses
064950	AOR-2	2	3/4	1-2/3	20"	2
065981	AOR-3	3	2/3	2-2/3	31"	3
064951	AOR-4	4	1-1/2	3-3/4	38"	

Replacement Parts for AOR Oil Reservoirs

PCN	Part	Contains
066002	Mounting Kit	Mounting brackets, self-tapping bolts and mounting stud nuts

Standard Product Offering

AOF High Efficiency Oil Filter

Highly Recommended for Scroll Compressors

The AOF is designed to protect the compressor from dirt and all solid contaminants including metallic magnetic particles. It is ideal for use with compressors that require a 4 micron or higher filtration rating.

Features

- Corrosion resistant epoxy powder paint finish
- 3/8" SAE connections for easy installation in oil lines
- 100% efficient to 4 micron particles; 99% efficient to 3 micron particles
- Compatible with all oils
- High debris capacity with low pressure drop



Specifications

- Maximum working pressure: 680 psig
- UL/CUL file number: SA 3124

Ordering Information

PCN	Description	Lay-in	Diameter
064952	AOF 303	9.63	3.06

Standard Product Offering

AOF High Efficiency Take-Apart Oil Filter

The AOF is designed to protect the compressor from dirt and all solid contaminants including metallic magnetic particles. It is ideal for burnout/clean-up situations.

Features

- Compatible with all oils
- Solid copper connections
- Quick change filter cartridge
- Corrosion resistant epoxy powder paint finish
- 100% efficient to 4 micron particles; 99% efficient to 3 micron particles
- 3/8 ODF connections
- Quick removal cover design simplifies filter replacement
- High debris capacity with low pressure drop



Specifications

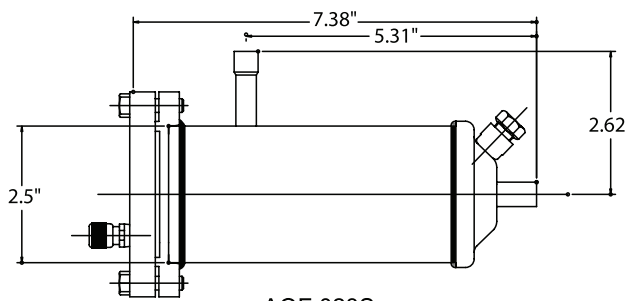
- Maximum working pressure: 450 psig
- UL/CUL file number: SA 7175

Ordering Information

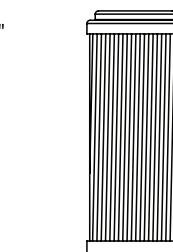
PCN	Description
062784	AOF 023S*
064799	FO23 Cartridge

*Cartridge not included

Standard Product Offering



AOF 023S
Take-Apart OIL
FILTER



F 023
REPLACEABLE
FILTER CARTRIDGE

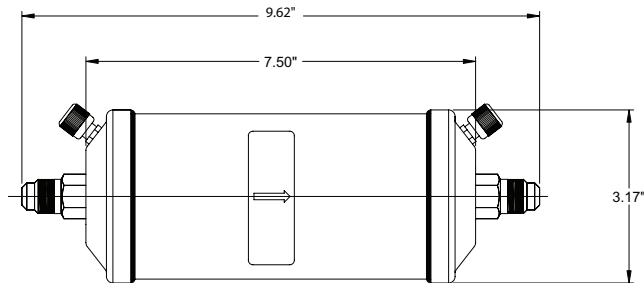
AOFD 553 Oil Filter Drier

The AOFD is designed specifically for refrigerant systems that use POE oil. POE oil is hygroscopic in nature, which means that it attracts and absorbs water. Moisture in a closed system can produce acid and will harm the compressor. The AOFD protects compressors by removing moisture and trapping contaminants.

Features

- Designed to clean and dry POE Oil
- 3/8" male flare connections for easy replacement
- 3 micron filtration for optimum oil cleaning
- Large filter surface area to provide maximum filtration
- Contains desiccant for moisture removal
- Designed to operate at a very low pressure drop
- Dual access valves for pressure drop monitoring

Dimensional Data



Specifications

- UL/CUL file number: SA3124
- Maximum Working Pressure: 680 psig

AOFD Water Capacity Table

Refrigerant Type	Drops @ 125°F
R-22	497
R-134A	518
R-404A	518
R-407C / R-410A	435
R-744	563

Ordering Information

PCN	Description
062829	AOFD 553 Oil Filter Drier

Standard Product Offering

The OMB is a compressor crankcase oil level protective control ideal for use with Copeland Scroll™ models ZF, ZB, ZR and ZS. It is also recommended for Copeland™, Carlyle, Bitzer and other semi-hermetic compressors.

Features

- Precision oil level measurement for maximum protection
- Easy monitoring with alarm and status lights
- Foam resistant design prevents nuisance trips unlike optical sensor designs
- Contaminant proof operation ensures accurate control
- Only approved oil level control for Copeland Scroll Compressors
- 5-time lockout feature protects compressor from repeated low oil level condition
- Self-contained unit with oil level sensor and integral solenoid to manage oil level supply
- Reverse Hall-effect sensor for precise measurement of oil level and protection from sensor magnetic debris contamination
- SPDT output contact for compressor shut-down and alarming
- Easy installation by sightglass replacement
- Adapters suitable for various types of scroll compressors (not required for reciprocating compressors)
- UL Recognized (File Number# MP604)
- Fluorescent floating ball
- Integral sight glass
- Debris retention magnet for reliable operation

Nomenclature example: OMB-JB1 ASC2 24 50/60

OMB	JB1	ASC2 24 50/60
Oil Management Control	JB1 - Junction Box MO1 - Series Relief Connector	Solenoid Coil Model Number, Voltage, Frequency (included)

Ordering Information

PCN	DESCRIPTION
065365	Oil Management Control OMB-JB1 ASC 2 24/50-60 - STD
065366	OMB-MO1 ASC 2 24/50-60 - STD
	Service Parts
048638	Inlet Flare Screen
020877	Sight Glass O-Ring
064812	Mounting O-Rings (3 pieces)
049191	KS-30112 Solenoid Repair Kit

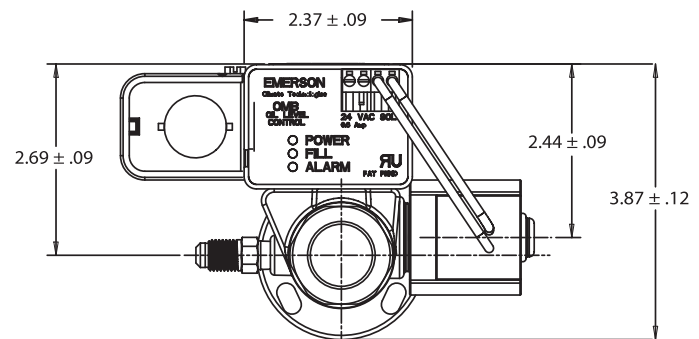


Specifications

- Maximum working pressure: 870 psi
- Solenoid MOPD: 350 psi
- Supply voltage: 24 V AC, 50/60 Hz
- Solenoid coil: ASC 2L 24 V AC, 50/60 Hz
- Current consumption: 0.6A
- Time delay for low level signalling: 5-10 seconds
- Time delay for after setpoint recovery: 5-10 seconds
- Alarm delay time: 120 seconds
- Alarm switch: SPDT
- Alarm contact rating: 10A @ 125; 5A @ 220 V AC 50/60 Hz
- Refrigerant compatibility: HFC, HCFC, CFC
- Oil temperature: 180°F Max.
- Storage and transport temperature: 140°F Max.
- Operating ambient temperature: 120°F Max.
- Oil supply fitting: 1/4" Male SAE
- UL/CUL file number: SA8547
- Transformer VA requirements*: 25"

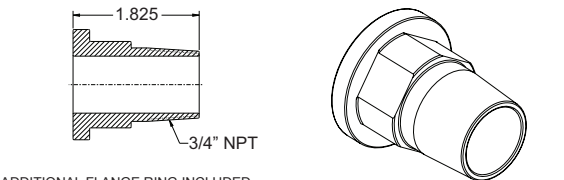
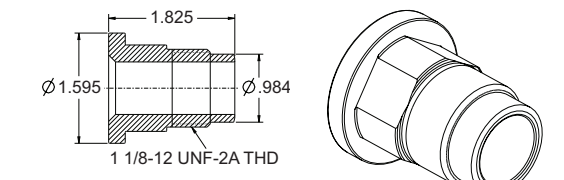
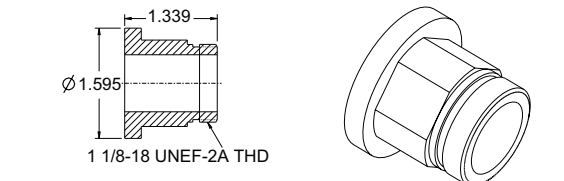
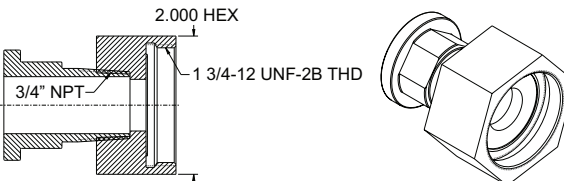
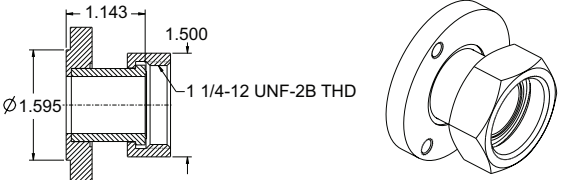
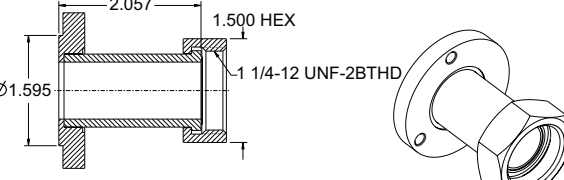
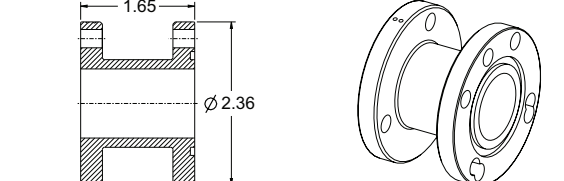
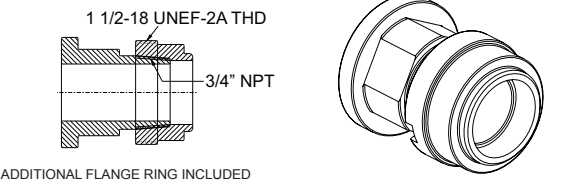
*NOTE: Field supplied transformer should always be of the same primary voltage as the electrical supply system.

Dimensional Data



Unit must be mounted horizontally for correct operation.

OMB adaptors

Description	PCN	Recommended Torque Adapter to Compressor	Drawing
Screw Adapter 3/4" x 14 NPTF	065668 OMB-ACA	30 - 40 ft - lbs	 <p>1.825 3/4" NPT ADDITIONAL FLANGE RING INCLUDED</p>
Screw Adapter 1 1/8" x 12 UNF-2A THD	065667 OMB - ACB	30 - 40 ft - lbs	 <p>1.825 Ø1.595 1 1/8-12 UNF-2A THD ADDITIONAL FLANGE RING INCLUDED</p>
Screw Adapter 1 1/8" x 18 UNEF-2A THD	066692 OMB-CO2	37-44 ft - lbs	 <p>1.339 Ø1.595 1 1/8-18 UNEF-2A THD ADDITIONAL FLANGE RING INCLUDED</p>
Screw Adapter, Female Nut 1 3/4" x 12 UNF - 2B THD	066078 OMB - ACE	30 - 40 ft - lbs	 <p>2.000 HEX 3/4" NPT 1 3/4-12 UNF-2B THD ADDITIONAL FLANGE RING INCLUDED</p>
Rotalock Adapter 1 1/4" x 12 UNF-2B THD	066650 OMB-ACF	80 ft - lbs	 <p>1.143 1.500 Ø1.595 1 1/4-12 UNF-2B THD ADDITIONAL FLANGE RING INCLUDED</p>
Rotalock Adapter 1 1/4" x 12 UNF-2B THD	066652 OMB - ACG replacement for 066077 OMB-ACD	80 ft - lbs	 <p>2.057 1.500 HEX Ø1.595 1 1/4-12 UNF-2B THD ADDITIONAL FLANGE RING & OIL INJECTION TUBE INCLUDED</p>
Adapter for Copeland Semi-Hermetic	063521 OMB - AUA	120 in - lbs	 <p>1.65 Ø2.36</p>
Screw Adapter 1 1/2" x 18 UNEF - 2A THD	065982 OMB - ASA	30 - 40 ft - lbs	 <p>1 1/2-18 UNEF-2A THD 3/4" NPT ADDITIONAL FLANGE RING INCLUDED</p>

* Install OMB to adapter flange (1/4" x 20 UNC x 1" Hex bolt) at 120 in- lbs

W-OLC Mechanical Oil Level Regulator

The W-OLC controls the oil level in the compressor crankcase with a float operated valve and keeps the oil level at the compressor manufacturer's recommended level. It is a direct replacement of popular competitive models.

Features

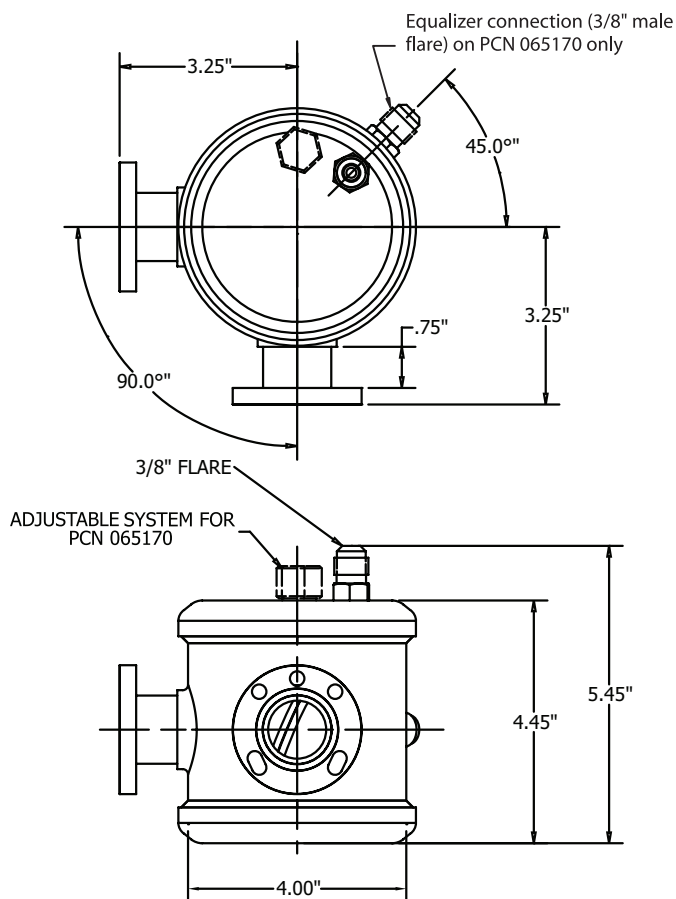
- Corrosion resistant epoxy powder paint finish
- Universal mounting pattern for standard semi-hermetic compressors

Nomenclature example: W-OLC-2

W-OLC	2
Series	Sight Glass*

* 2 = 1/2, 4 = 1/4, 2-4 = adjustable

Dimensional Data



See adapters page.



Specifications

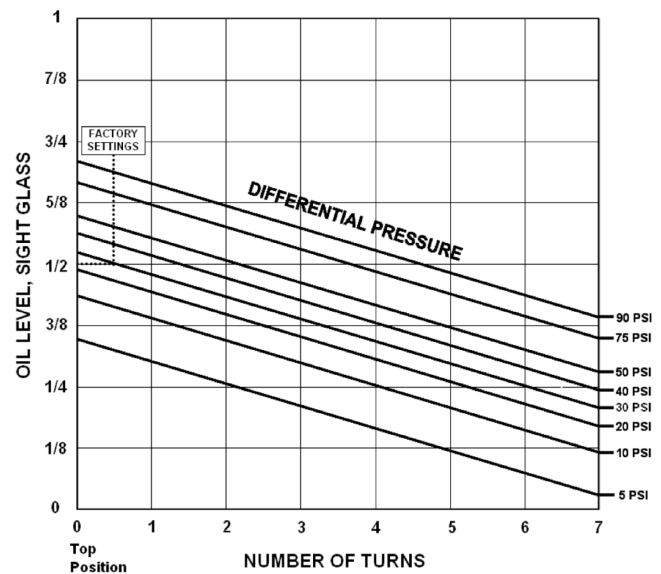
- Maximum working pressure: 450 psi
- UL/CUL file number: SA8547
- Max. OPD: 90 psi

Ordering Information

PCN	Description	Sight Glass Level
064953	W-OLC-2	1/2 sight glass
064954	W-OLC-4	1/4 sight glass
065170	W-OLC-2-4	1/4 to 1/2 level (adjustable)

Standard Product Offering

OLC-2-4 OIL LEVEL



Note: Data obtained using POE lubricant at 86°F with a 1 inch diameter sight glass.

The Oil Level factory setting is in the middle of the Sight Glass at 30 PSI for the Oil Level Control. Located on the top of the control is the seal cap. Remove this to adjust the oil level. To adjust the stem, turn it clockwise and counterclockwise, respectively, to lower and raise the stem. One can determine the adjustment needed from the OLC-2-4 Oil Level Chart. One eighth of an inch increments are used to illustrate the oil level at a selection of differential pressure conditions.

Unlike our Competitors Controls no damage will occur when attempting to adjust beyond 7 turns. Our Design has a hard Stop to prevent damage.

In the case of an unexpected system defrost or load increase, large amounts of oil will return through the suction line. Consequently, the oil control will not be able to keep the oil level from rising beyond the control point.

Universal Acid Test Kit

The Universal Acid Alert Test Kit provides a reliable indication as to the acid level of the refrigeration oil.

Features

- Quick and easy test kit
- Universal acid test kit for use with all refrigeration lubricants
- By changing the percentage of oil sample taken, the acid number of the oil can be accurately determined
- Phase separation of the chemicals eliminates interference from discolored oil

Ordering Information

PCN	Description
064427	AA Kit Universal

Standard Product Offering



Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

Quick Select Guide

Application	Feature	Type
Commercial Refrigeration Air Conditioning	Temperature Control, Adjustable Set Point and Differential	TS1
	Single Pressure Control, Adjustable Set Point and Differential	PS1
	Dual Pressure Control, Adjustable Set Point and Differential	PS2
Mini-Pressure Controls	Differential PressureControl	FD113
	Mini-Pressure Control	PSC
Industrial Pressure Controls	Electronic Fan Speed Control	FSX
	Industrial Pressure Control, U.L. Approved	FF444

Thermal
Expansion Valves

TXV Extended
Capacity Tables

EX Valves
and Controls

EX Extended
Capacity Tables

Solenoid Valves
and Coils

Solenoid Capacity
Tables

Industrial Solenoid
Valves

Shut-Off
Valves

System
Protectors

System Protectors
Capacity Tables

Oil
Controls

Temperature
Pressure Controls

TS1 Series Single Control

The TS1 series adjustable thermostats are designed for application in refrigeration and heat pump systems. In these systems, thermostats serve control and monitoring functions, such as space temperature control, high/low temperature alarming or defrost termination. By operating a set of electrical contacts, a temperature value is kept inside a certain limit.

Features

- Adjustable temperature and differentials
- Range and differential individually lockable by wire seal
- Captive terminal and cover screws
- Manual toggle for system checkout and override
- Bellows heater for thermostats with vapour charge
- Standard accessories include mounting brackets and knob with lockplate on all individually packed controls
- Non-ambient sensitive
- Heavy-duty SPDT switch allows handling of most loads directly without the use of relays



Specifications

- Ambient temperature ranges -50°C to +70°C (-58°F to +158°F)
- SPDT switch rated for 120 VAC/240VAC at 24FLA and 144 LRA
- Agency approvals include: UL/CUL file number E85974, VDE 0631/0660, TÜV, CE 73/23/EWG, CE 93/68/EWG

Options

- Vapor charges
- Factory set to customer specification
- Different types of mounting brackets
- Sensor bulb wells and capillary tube holders
- Special approvals
- Range and differential pointer in units °C and °F

Nomenclature example: TS1 B1E

TS1	B	1	E
Product Name TS1 = Adjustable thermostat TSA = Customer specials	Housing Variant/function C = Frost monitor, auto reset D = Frost monitor, manual reset	Temperature Range 0 = +40 to +68°F (+4.5 to +20°C) NOTES Temp ranges 0-4: manual reset for falling temperature	Sensor Type P = Vapor Charge, 6m. capillary

Thermal Expansion Valves
 TXV Extended Capacity Tables
 EX Valves and Controls
 EX Extended Capacity Tables
 Solenoid Valves and Coils
 Solenoid Capacity Tables
 Industrial Solenoid Valves
 Shut Off Valves
 System Protectors
 System Protectors Capacity Tables
 Oil Controls
 Temperature Pressure Controls

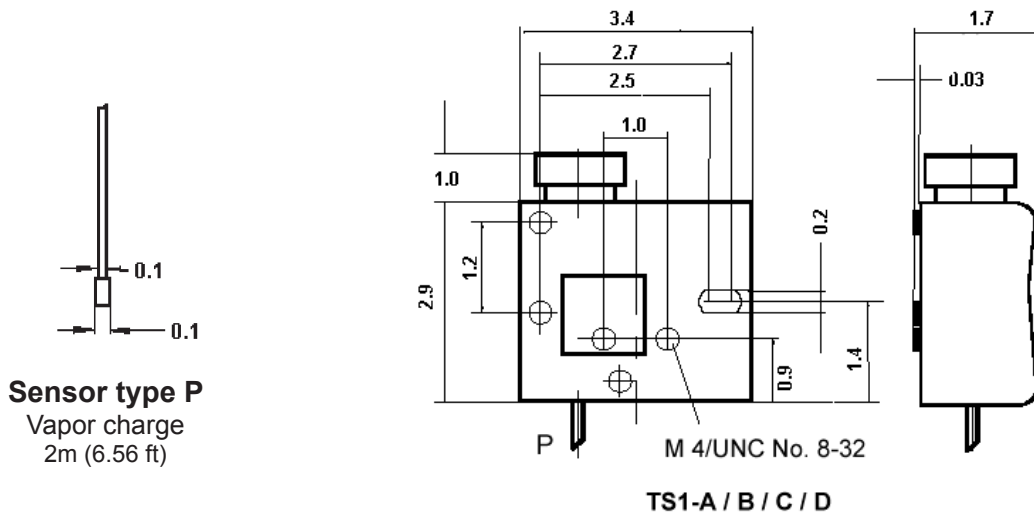
TS1 Series Single Control

Ordering Information

Type	PCN	Adjustment Range		Factory Setting °F (°C)	Temperature Sensor	
		Upper Setpoint °F (°C)	Different Setpoint °F (°K)		Charge	Type
Freeze-Stat, Top Operated Without Off-Switch (Capillary Type Sensor)						
TS1-COP	097882	40 TO 68 (+4.5...+20)	5 (3) fix	40/36 (4.5/+2)	VAPOR	20 FT. (6 m.) capillary
TS1-DOP	097885	40 TO 68 (+4.5...+20)	man. reset ca. 5 (3) fix	36 (+2)	VAPOR	20 FT. (6 m.) capillary

Standard Product Offering

Dimensional Diagrams (in)



PS1 Series Single Control

PS1 Single Pressure Controls are designed for use on high and low pressure applications in refrigeration, air conditioning and heat pump systems, providing single-device control of the compressor or other electrical device.



Features

- Adjustable pressures and differentials
- Narrow adjustable differential depending on model
- Range and differential pointer in units bar and psig
- Range and differential individually lockable by tab
- High rated SPDT contacts for all versions
- Captive terminal and cover screws
- Manual toggle for system checkout and override

Options

- Different pressure connections
- Automatic and manual reset versions
- Factory set to customer specification

Specifications

- SPDT switch rated for 12FLA and 72LRA at 240VAC and 16FLA and 96LRA at 120VAC
- Agency approvals include: UL/CUL file number E85974 CE per (LVD) low voltage directive

Nomenclature example: PS1-X5K

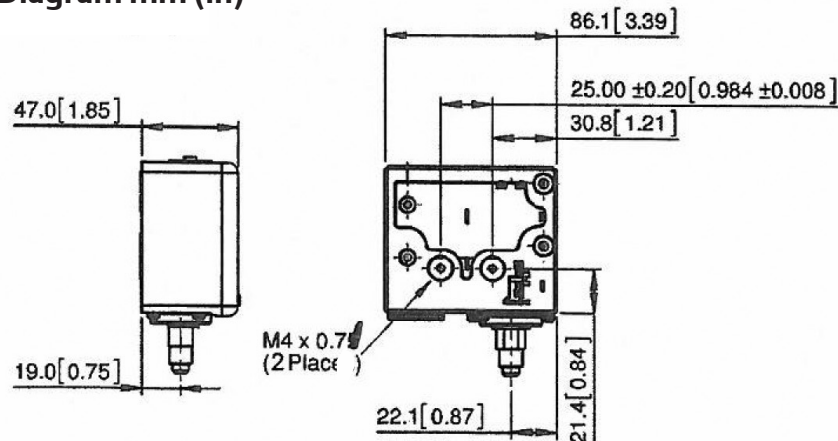
PS1	Function	Pressure Range	Connection Type
Adjustable Single Pressure Control	X = Auto reset Y = Manual reset - external	External range and differential adjustments 3 = 9" Hg to 102 psig (0.3 to 7 bar) 4 = 29 to 290 psig (2 to 20 bar) 5 = 87 to 464 psig (6 to 32 bar)	A = 1/4" SAE male flare K = 1 m (3 ft.) cap tube w/ 1/4" flare nut

Ordering Information

Single Pressure Control	PCN	Adjustment Range		Factory Setting (psig)	Connection Type
		Upper Setpoint (psig)	Differential Setpoint (psig)		
Low Pressure Controls					
PS1-X3A	099022	9" Hg to 102 psig	15 to 73 psig	49/65 psig	1/4" SAE male flare
PS1-X3K	099024				1 m (3 ft.) cap tube w/ 1/4" flare nut
High Pressure Controls					
PS1-X5A	099026	87 to 464 psig	44 to 218 psig	141/280 psig	1/4" SAE male flare
PS1-X5K	099027			230/290 psig	1 m (3 ft.) cap tube w/ 1/4" flare nut
PS1-Y5K	099030		Fixed	290 psig	

Standard Product Offering

Dimensional Diagram mm (in)



PS2 Series Dual Control

PS2 Dual Pressure Controls are designed for use on high and low pressure applications in refrigeration, air conditioning, and heat pump systems. This control react to changes in either low or high side pressures, providing single-device control of the compressor or other electrical device.

Features

- Adjustable pressures and differentials
- Narrow adjustable differential depending on model
- Range and differential pointer in units bar and psig
- Range and differential individually lockable by tab
- High rated SPDT contacts for all versions
- Captive terminal and cover screws
- Manual toggle for system checkout and override
- Factory installed wire bridge for reduced installation effort
- High side convertible from manual to auto reset.

Options

- Different pressure connections
- Automatic and manual reset versions
- Factory set to customer specification



Specifications

- SPDT switch rated for 12FLA and 72LRA at 240VAC and 16FLA and 96LRA at 120VAC
- Agency approvals include: UL/CUL file number E85974, CE per (LVD) low voltage directive

Nomenclature example: PS2-Y7A

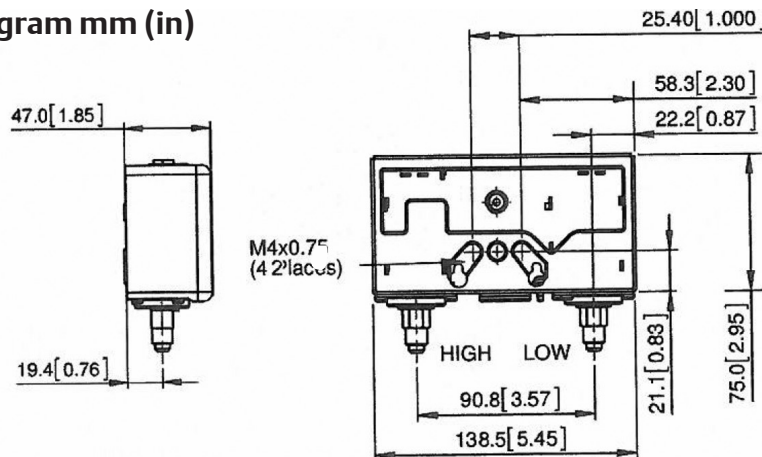
PS2	Function		Pressure Range	Connection Type
Adjustable Dual Pressure Control	X = Auto reset	Internal range and differential adjustments	7 = Left side: 9" Hg to 102 psig (-0.3 to 7 bar) Right side: 87 to 464 psig (6 to 32 bar)	A = 1/4" SAE flare fitting K = 1 m (3 ft.) cap tube w/ 1/4" flare nut L = 1 m (3 ft.) cap tube w/ 1/4" ODM solder connection
	Y = Low side: Auto reset	External range and external differential		
	Y = High side: Convertible reset			

Ordering Information

Dual Pressure Control	PCN	Low Pressure Side			High Pressure Side			Connection Type
		Pressure Range	Differential	Factory Setting	Pressure Range	Differential	Factory Setting	
PS2-Y7A	099008	9" Hg to 102 psig	15 to 73 psig	49/65 psig	87 to 464 psig	Fixed	290 psig	1/4" SAE flare fitting
PS2-Y7K	099009							1 m (3 ft.) cap tube w/ 1/4" flare nut

Standard Product Offering

Dimensional Diagram mm (in)



Thermal Expansion Valves
TXV Extended Capacity Tables
EX Valves and Controls
EX Extended Capacity Tables
Solenoid Valves and Coils
Solenoid Capacity Tables
Industrial Solenoid Valves
Shut-Off Valves
System Protectors
System Protectors Capacity Tables
Oil Controls
Temperature Pressure Controls

FD113-ZUK Oil Pressure Safety

The FD113 Oil Pressure Safety Control senses the effective oil pressure on pressure lubricate compressors. If inadequate oil pressure exists, a time delay is energized. If the oil pressure does not recover to safe levels within the time delay setting, the compressor is shut down. The time delay allows the compressor adequate time to establish oil pressure on start up and avoids nuisance shutdowns on pressure drop of short duration during the run cycle.

Maximum application flexibility is assured by providing an adjustable differential pressure switch which can be adjusted to the compressor's minimum required oil pressure needs and an adjustable electronic time delay which allows the selection of the length of time the compressor runs below the minimum pressure before shutdown. The minimum pressure setting and time delay values specified by the compressor manufacturer should be used when installing the FD113 control.

Features

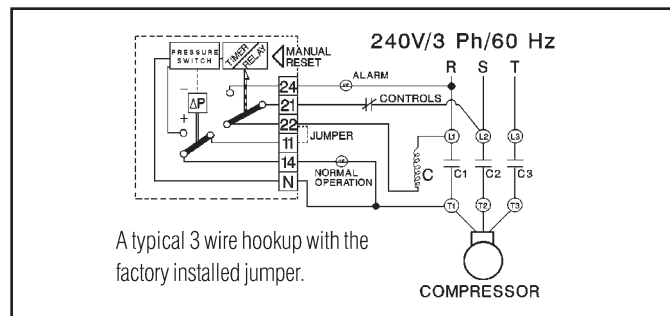
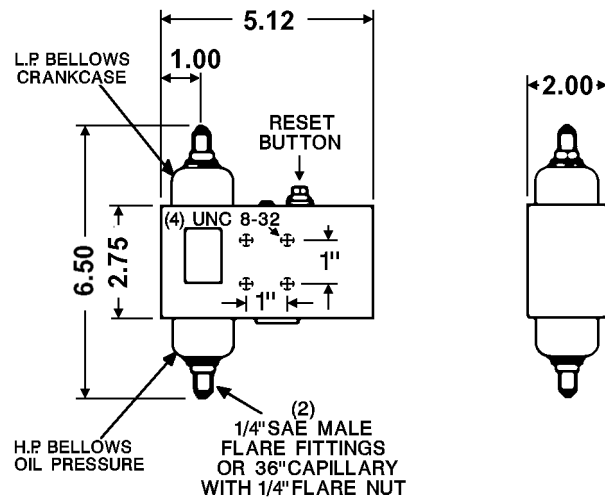
- Pressure range adjustable from 4 to 65 psid; Timer start pressure - timer stop pressure is 3 psid above timer start pressure
- A SPDT switch is used in the pressure portion of the control which allows the addition of a "safe-light" when desired
- Electronic Timer is Time-Adjustable from 20 to 150 seconds
Supply voltage - 24 to 240 Volt AC/DC; Timing unaffected by voltage or ambient temperature variations
- A SPDT Manual Reset Switch is used in the Timer Module; Upon time-out, the compressor is stopped and an alarm circuit is energized; To restart the compressor and deenergize the alarm circuit, the reset button is pushed
- A factory installed Jumper allows the FD113 to be powered from a single source power; Should separate circuits be desired for the timer and "Lockout" switch, the Jumper can be removed

Specifications

- Agency approvals include: UL/CUL file number E85974, VDE 0631/0660, TÜV, CE 73/23/EWG, CE 93/68/EWG



Dimensional Data (in)



Ordering Information

PCN	Part Number	Adjustable Pressure Range	Adjustable Time Delay	Supply Voltage	Pressure Connection
097456	FD113-ZUK	4-65 psid	20 to 150 seconds Factory-set at 120 seconds	24 to 240V AC/DC	(2) 36" capillary with 1/4" flare nut

Standard Product Offering

PSC Mini Pressure Control

The PSC Mini Pressure Control provides the ultimate in reliability and flexibility in a commercial grade mini pressure control. A standard plug connectable design simplifies installation and service. The SPDT switch allows the addition of alarm circuits on high or low pressure applications. Models with high temperature bellows and built-in pressure pulsation snubbers make the PSC ideally suited for compressor head mounting high pressure limit control applications—automatic or manual reset versions are available.

Pressure Ranges/Differential also make the PSC controls ideally suited for condenser fan cycling applications. Low Pressure versions with standard or narrow differential switches make these controls ideally suited low pressure limit or back-up safety controls on electronically controlled systems. Numerous options, such as panel mount or capillary connections are available on high volume applications. Standard on all models are worldwide agency approvals.

Typical Applications

- High Pressure Limit/Alarm
- Condenser Fan Cycling
- Low Pressure Limit/Alarm
- Low Pressure Cycling (Back-Up)
- Defrost Termination/Fan Delay
- Rupture Guard Alarm

Features

- Commercial Grade High/Low/Condenser Fan Cycling Pressure Controls for use on Refrigeration/AC Applications
- Mini-Size 2" x 1-1/2" x 2-3/4"
- Standard SPDT Switch Action
- Automatic or Manual Reset
- Models available with high temperature bellows and built-in pressure pulsation snubber for direct head mount high pressure sensing/limit applications
- Plug Connectable with hub for 1/2" flexible conduit
- Factory preset to customer's desired pressure specifications
- Precise, repeatable settings
- Narrow differential "Micro" switch available on low pressure models



Specifications

- Worldwide Approvals: UL/CUL/VDE/TÜV
- UL/CUL file number: E85974

Electrical Ratings—SPDT Switch

- Standard Switch – High/Low Pressure
 - Load Contact: 6 FLA – 36 LRA – 120/240 VAC
 - Pilot Duty: 240VA @ 120, 480VA @ 240 VAC
 - Back Contact 0.5 Amp 120/240 VAC Pilot Duty
- Micro Switch – Low Pressure
 - 2.5 FLA – 15 LRA – 120/240 VAC
 - Pilot Duty: 120VA @ 120, 240VA @ 240 VAC
 - Back Contact 0.5 Amp 120/240 VAC Pilot Duty

Ambient Temperature

- Storage: –30° to +160°F Operating: –20° to +140°F
- Low Pressure
 - Single diaphragm
 - Maximum media temperature 150°F
- High Pressure
 - Bellows design
 - Maximum media temperature 300°F
 - Internal Pressure Pulsation Snubber available for direct head mount

Protection

- Protect from rain, direct sunlight and exterior damage

Weight

- Approximately 0.25 pound, depending upon configuration

Compatibility

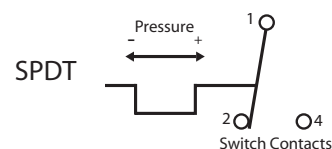
- HFC, HCFC, CFC

Agency Approvals

- UL/CUL/DIN/TÜV, depending upon configuration

Switch Action

- SPDT Standard
 - 1–2 Open on Rise
Close on Fall
 - 1–4 Close on Rise
Open on Fall



PSC Mini Pressure Control

Nomenclature example: PSC-W6S

PSC	W	6	S
Product Name	Function	Pressure Range/Contacts	Pressure Connections
	<p>A = Pressure control, automatic, high or low pressure applications (Single diaphragm option, 158° F rating, Range 1-5 only, without snubber) (Bellows option, 300° F rating, with snubber, Range 6 only)</p> <p>B = Pressure cut-out, external manual reset, DIN/TUV approved (Double diaphragm option, 158° F, without snubber, Range 1-5) (Bellows option, 300° F rating, with snubber, Range 6 only)</p> <p>R = Pressure control, external manual reset, high or low pressure applications (Single diaphragm option, 158° F rating, Range 1-5 only, without snubber) (Bellows option, 300° F rating, with snubber, Range 6 only)</p> <p>W = Pressure limiter, automatic, DIN/TUV approved (Double diaphragm option, 158° F, without snubber, Range 1-5) (Bellows option, 300° F rating, with snubber, Range 6 only)</p>	<p>Standard Contacts</p> <p>1 = Low pressure 15" Hg to 90 psig</p> <p>5 = High pressure 100 to 465 psig</p> <p>6 = High pressure 145 to 623 psig</p> <p>Microswitch Contacts</p> <p>J = Low pressure 15" Hg to 90 psig</p>	<p>K = 1m (3 ft.) cap tube with 1 1/4" flare nut (range 1-5)</p> <p>L = 1m (3 ft.) cap tube with 1/4" ODM Solder Connection (range 1-5)</p> <p>S = 1/4" Female Flare fitting, Schrader depressor (range 1-6)</p>

Specification Selection Table

PCN	Type and Description	High Event Range (PSIG)	Differential Range (PSID)	Setting	Reset Function	Pressure Connection	Electrical Connection	Electrical Ratings	Maximum Over Pressure	Mounting
Low Pressure Controls										
097815	PSC-AJS ¹	15" to 90	4 Low / 7 High	1.5/6	Auto	1/4" Female Flare with Schrader Depressor	DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable	2.5 FLA/15 LRA	360 PSIG	Free Standing Direct Mount
097849	PSC-A1S		9 Low / 15 High	5/15				6 FLA/36 LRA		
High Pressure Controls										
097793	PSC-W6S	145 to 623	72 Low / 87 High	320/395	Auto	Same as above, plus stainless steel bellows with snubber	DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable	6 FLA/36 LRA	695 PSIG	Free Standing Direct Mount
097998	PSC-B6S			395	Manual					

¹ Micro-Switch Construction.

² All switches SPDT ratings stated are 1 side only 120/240 VAC. Opposite switch side – 1/2 amp pilot duty 120/240.

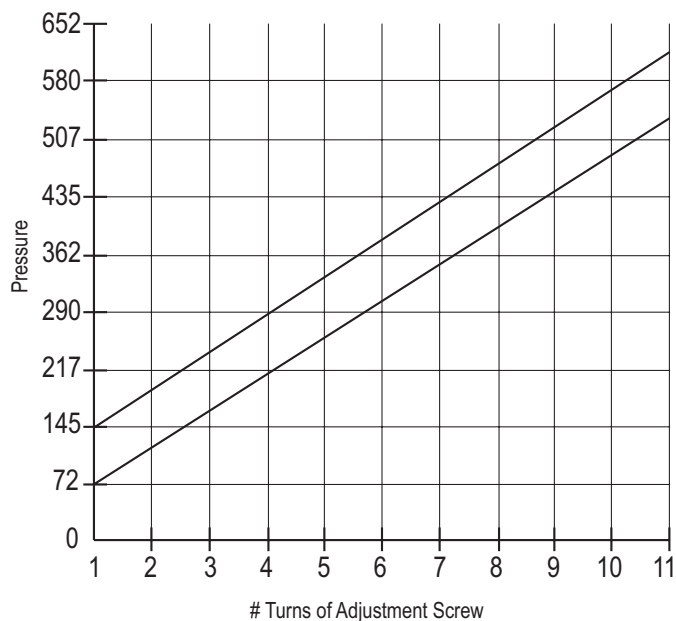
Standard Product Offering

PSC Setting Capabilities

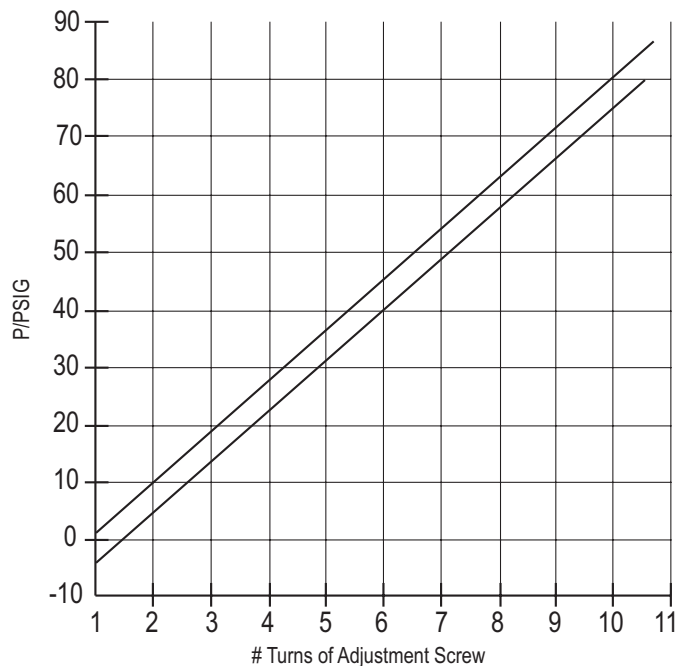
The PSC is factory preset.

For special applications, these controls can be factory preset to other values as illustrated on the appropriate graphs.

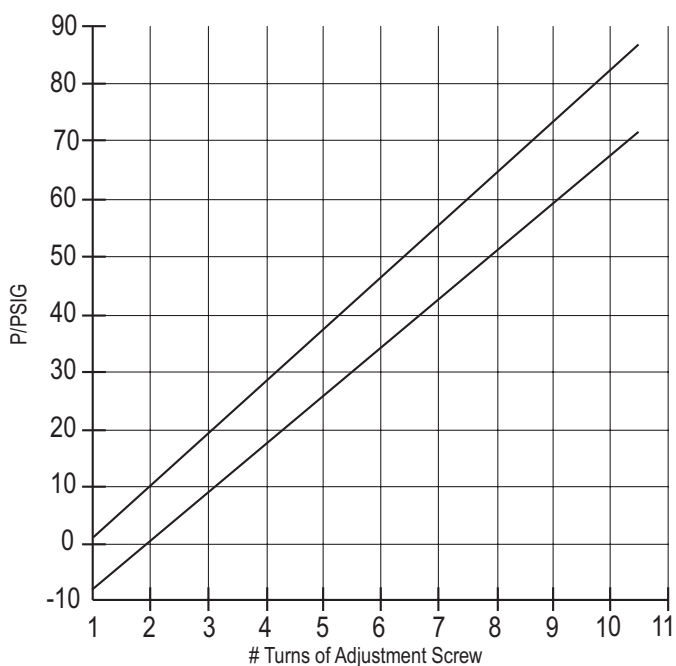
Standard Switch Setting Capability Pressure Range = 6



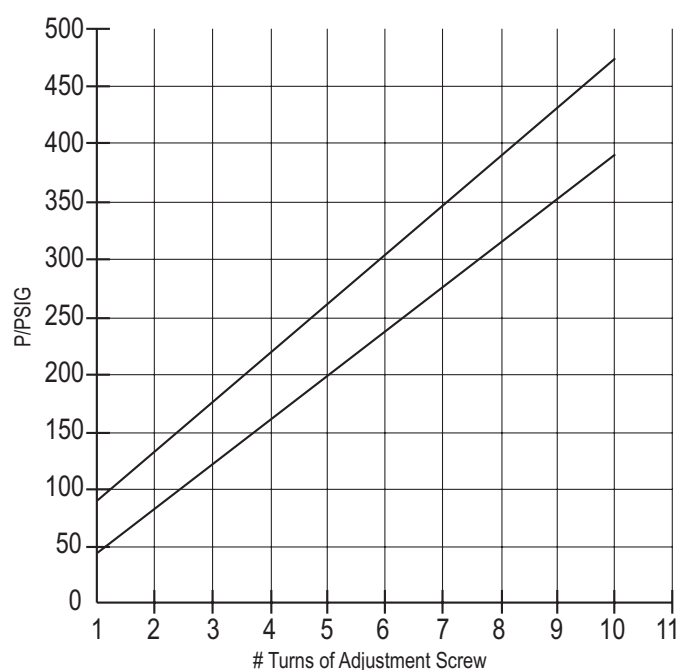
Micro-Switch Setting Capability Pressure Range = J



Standard-Switch Setting Capability Pressure Range = 1



Standard-Switch Setting Capability Pressure Range = 5



FSY Electric Fan Speed Control

The FSY Fan Speed Control controls the head pressure in air-cooled condensers by reducing the fan speed to maintain head pressure as the outside temperatures/condenser pressure drops. As the motor speed drops under lower ambient/load condition fan noise is also reduced.

The FSY is designed for use with permanent split capacitor and shaded pole fan motors, approved for use by motor/equipment manufacturers for variable voltage, phase angle (triac) speed control.



Features

- Connector includes 2 m. cable installed (FSF and FSO)
- Connector turnable (in 90° steps)
- Compact Design
- State-of-the-Art Electronics
- Direct mount—Easily retrofit to suitable motor
- Low Pressure “Turn Off” Operation
- Adjustable Pressure Setting
- Multiple FSY controls can be used in parallel on multi-circuit condensers
- 2 Cable types:
FSF-N15 with internal circuit design to comply with EC-Directive 89/336/EC (Electromagnetic compatibility requirements for Europe)
FSO-N15, standard with internal voltage spike and over current protection

Options

- Custom Calibration
- Other Operating Voltages/Pressure Ranges

Specifications

- Nominal current: 0.1 to 4 Amp max up to 104°F (40°C)
0.1 to 2.5 Amp max up to 140°F (60°C)
- Starting current: max. 8 Amp
- Temperature Range
Storage and transportation: -30°C to 70°C
Ambient temperature: -20°C to 55°C
Medium temperature: -20°C to 70°C
- Pressure Operated Fan Speed Control
- Supply Voltage: 230V AC + 15-20%.
- Protection: Provide an ultimate enclosure to protect from direct rain, sunlight and external damage.
- Weight: 3-1/2 ounces
- Approvals: UL/CUL file number E183816
CE Low Voltage Directive 72/23/EC
Connector per DIN 43650

Nomenclature example: FSY-43S

FS	Y	4	1			S
Fan Speed Control	Series	Max. Current Rating 4 = 4 Amps maximum at 104°F ambient temperature	Pressure Range			Pressure Connection
			Pressure Range	Modulating Band	Factory Setting	S = 1/4" SAE female (7/16" -20 UNF) with Schrader Depressor
			3 = 12.4 to 28.4 (180 to 411 psig)	66 psig	16.1 bar (233 psig)	

Ordering Information

Description	PCN	Adjustable Range	Modulating Band	Factory Setting	Pressure Connection
			(PSI)		
FSY-43S	097782	180 to 410	66	233	7/16" -20 UNF Female

Standard Product Offering

Parts/Accessories

PCN	TYPE
097995	FSF-N15 Cable (EMC)
097775	FSO-N15 Cable (standard)

Standard Product Offering

FF444 Industrial Pressure Control

The FF444 Industrial Pressure Controls are general purpose switches suitable for oil, water and air at pressures up to 465 psig.

Typical Applications

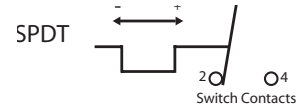
- Industrial Pressure Control
- Pneumatic and Hydraulic Systems
- Oil Lubrication Systems
- Pump/Compressor Control

Features

- SPDT snap-action contacts
- Independent adjustable upper and lower switching pressures
- Diaphragm-type control for low pressure applications (Buna N diaphragm):
 - resistant to mineral oils
 - medium temperatures up to 160°F
- Transparent polyamide hood – U.V. resistant
- Surface mounted Type 4 enclosure
- Optional manual reset locking on pressure rise

Options

- Optional manual reset locking on pressure rise



Specifications

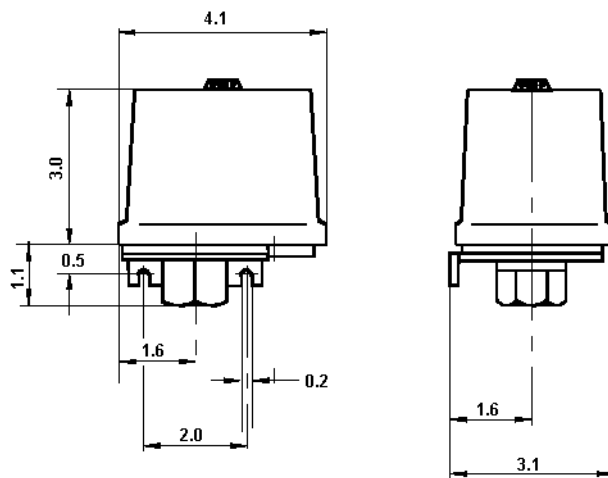
- Control circuit rating: 5 A (B300)
- Rated voltage: 300 VAC maximum
- Ambient operating temperature: -10°F to +120°F
- Medium temp. at pressure element: + 160°FMax.
- Resistance to vibration: (4 Hz to 1000 Hz) 4g
- Weight: 1.1 lbs.
- UL/CUL file number: E85974

Description	120VAC	240VAC
Maximum motor rating single phase	1/2 hp	1 -1/2 hp
Motor rated, FLA	10 A	10 A
Motor rated, LRA	60 A	60 A

Nomenclature example: FF444-V2-DRF

FF444	V2					D	R	F
Industrial Pressure Control		Lower Switch Point Range	Upper Switch Point Range	Smallest Differential @ Lower-Higher end of Range	Standard Settings	Valve Design D = Diaphragm	Reset Type A = Auto R = Manual, Locking on Pressure Rise	Pressure Connection A = 7/16"-20 UNF male F = 1/4"-18 NPTF
	V4	6-217 psig 0.4-15 bar	15-232 psig 1-16 bar	9-14 psig 0.6-1 bar	58/174 psig 4/12 bar			
	V5	12-435 psig 0.8-30 bar	29-464 psig 2-32 bar	17-29 psig 1.2-2 bar	145/290 psig 10/20 bar			

Dimensional Data (in)



Ordering Information

PCN	Description
097311	FF444-V4-DAF
097379	FF444-V4-DRF

Standard Product Offering